DOCUMENT RESUME

ED 288 964 CE 047 978

AUTHOR Pritz, Sandra G.; Crowe, Michael R.
TITLE Technique for Individualization: The Academic Development Plan. BASICS: Bridging Vocational and Academic Skills.
INSTITUTION Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE 87
GRANT G008620030
NOTE 101p.; For related documents, see ED 252 701-702, ED 252 737-739, ED 257 995, ED 266 264, ED 276 873, and CE 047 969-977.
AVAILABLE FROM National Center Publications, Box SP, National Center for Research in Vocational Education, 1960 Kenny Road, Columbus, OH 43210-1090 (Order No. SP300EE--$9.95; complete BASICS set, SP300--$198.00).
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Academic Achievement; Academic Education; *Basic Skills; Cognitive Style; *Diagnostic Teaching; Disabilities; Gifted; Immigrants; *Individualized Education Programs; *Integrated Activities; Integrated Curriculum; Migrant Youth; Minority Groups; Needs Assessment; Secondary Education; Sex Fairness; *Student Needs; Talent; Teaching Methods; *Vocational Education

ABSTRACT

This document guides school staff through a systematic identification of individual student needs and steps to meet those needs. It is part of BASICS, a package of integrated materials developed to assist teachers, administrators, and counselors in bridging vocational and academic skills. It discusses the process for developing an Academic Development Plan (ADP) and completing an ADP form. An introduction describes the rationale for an ADP and the ADP process. Each of the next six sections focuses on one of the ADP tasks: prepare to develop ADPs, obtain information for the ADP, analyze students' needs and design a plan to address them, put the plan into action, monitor student progress, and revise the ADP. Extensive appendixes include the ADP form; information on diagnostic testing (formal and informal student assessment, additional sources of information); basic skills analysis forms; information on cognitive style, learning style, and teaching techniques; a summary of sex equity principles; an article with basic information on mainstreaming and school-to-work transition; and background material on minority and immigrant, gifted and talented, and migrant youth. (YLB)

Basics
Bridging Vocational and Academic Skills

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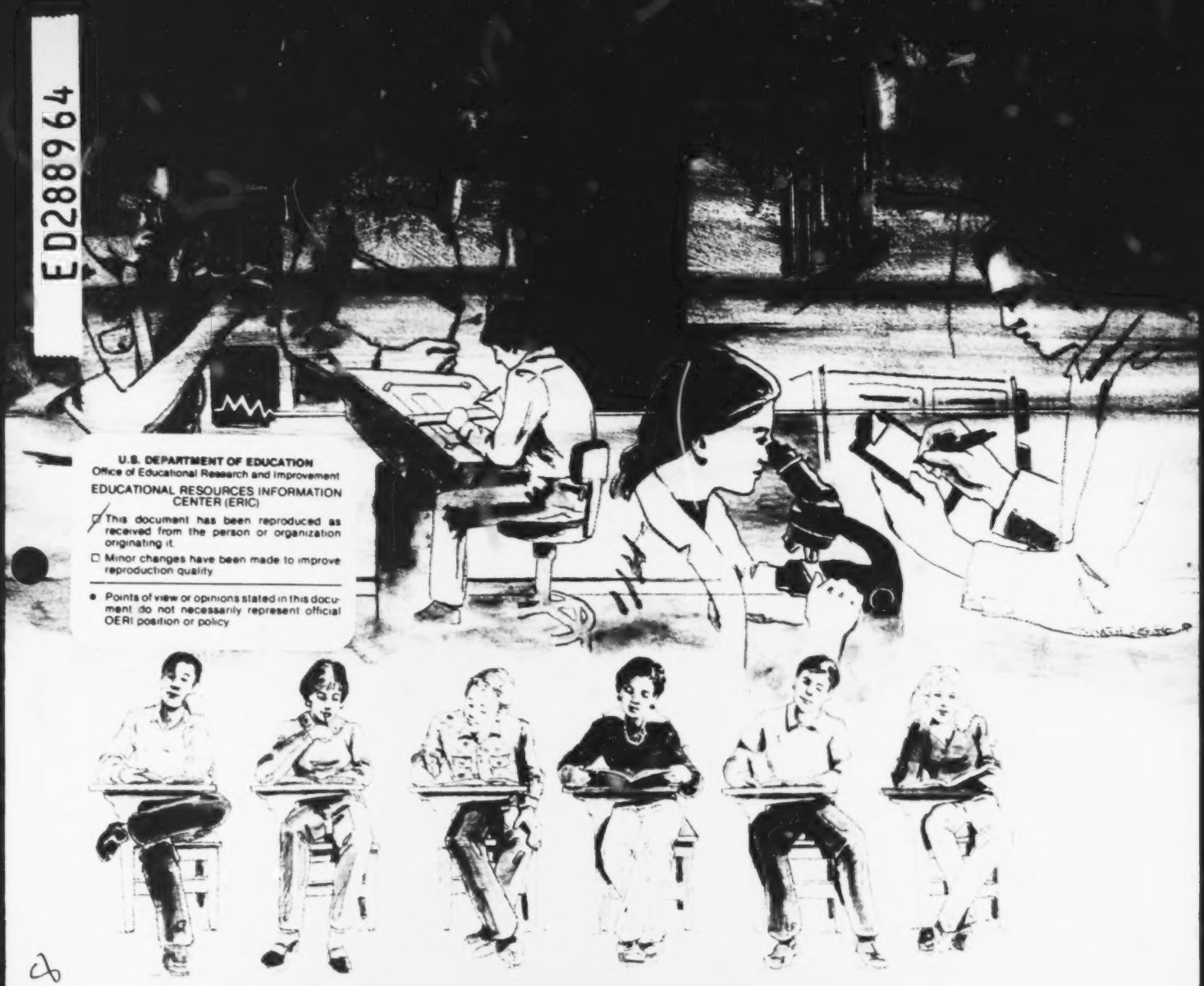

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Strengthen basic skills by using . . .

TECHNIQUE FOR INDIVIDUALIZATION: THE ACADEMIC DEVELOPMENT PLAN

A Targeted Teaching Technique

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1987

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FUNDING INFORMATION

Project Title:	National Center for Research in Vocational Education, Applied Research and Development
Grant Number:	G008620030
Project Number:	051BH60001A
Act under Which Funds Administered:	Carl D. Perkins Vocational Education Act, P.L. 98-524, 1984
Source of Grant:	Office of Vocational and Adult Education U.S. Department of Education Washington, D.C. 20202
Grantee:	The National Center for Research in Vocational Education The Ohio State University Columbus, Ohio 43210-1090
Acting Executive Director:	Chester K. Hansen
Disclaimer:	This publication was prepared pursuant to a grant with the Office of Vocational and Adult Education, U.S. Department of Education. Grantees undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official U.S. Department of Education position or policy.
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Epigraph: Progress toward focusing on the cognitive in vocational education—on helping students think and learn as they solve vocational problems—rather than on the behavior of students as they do vocational tasks, will do much toward preparing students for the challenges of the workplace.

Janet F. Laster, *Toward Excellence in Secondary Vocational Education: Using Cognitive Psychology in Curriculum Planning*, 1985.

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FOREWORD

Converging factors point to a need to look for new pathways to vocational education excellence: the public's increased expectations regarding academic outcomes of education, heightened by a number of national reports; increased graduation requirements and declining vocational enrollments in many states; the emphasis in the Perkins Act on the need for strengthening academic foundations; and business and industry requests that entry-level employees have a more thorough knowledge of the basic academics they will need to apply in their vocational fields. Those concerned agree that students need to have stronger basic academic skills as they leave secondary education programs—stronger academic skills for graduation, for work, and for life.

The National Center has sponsored diverse efforts dealing with basic skills in vocational education, from research to development to dissemination. Much has been learned about vocational students' basic skills learning problems. In order to make connections between research and practice, The National Center has, through synthesis and development, prepared an integrated package for teacher use, reinforcing this information with practical applications gleaned from teachers' repertoires across the nation. The products in the package are aimed toward enabling vocational and academic teachers to strengthen the academic component of vocational programs through joint effort.

The *BASICS* package provides resources in five focus areas: research findings, teaching techniques, instructional materials, instructional strategies, and support roles. The resources are organized in three looseleaf guidebooks for flexible use. An accompanying videotape provides an orientation to the topic and to the package.

The Bridger's Guide orients administrators, counselors, teachers, and employers to the purpose and application of *BASICS*; individual roles are explained, resources identified, and implementation guidelines and strategies outlined in workshop format. Individual components to the guide are as follows:

- *Implementation Guide* describes the philosophy of *BASICS* and provides guidelines for implementing the program.
- *Support Roles for Basic Skills* describes the role of administrators, counselors, employers, and families in a program for improving basic skills.
- *Primer of Exemplary Strategies* provides teachers with examples of other teachers' successful efforts and diverse approaches.
- *Roadsigns from Research* (posters and brochures) highlights key research findings of interest to those involved in strengthening basic skills.

Targeted Teaching Techniques provides vocational and academic teachers with assessment, planning, and management tools to improve students' basic skills. Individual components are as follows:

- *Technique for Management: Time for Learning* lays foundations for more effective basic skills instruction through studying the use of classroom time.

- *Technique for Remediation: Peer Tutoring* discusses the planning, implementation, and evaluation of peer tutoring programs to strengthen students' basic skills.
- *Technique for Computer Use: Software Evaluation* describes a procedure for joint evaluation of educational software for basic skills instruction.
- *Technique for Individualization: The Academic Development Plan* guides school staff through a systematic identification of individual student needs and steps to meet those needs.
- *Techniques for Joint Effort: The Vocational-Academic Approach* describes teaching techniques that vocational and academic teachers can use jointly to improve students' basic skills.

Developing an Instructional Program provides teachers with practical and theoretical information on the development or selection of appropriate applied basic skills instructional materials. Individual components are as follows:

- *Instructional Materials Development* discusses the prerequisites of materials development, alternative curriculum types, and guidelines for materials development and review.
- *Supplemental Instructional Resources* identifies sources of basic skills instructional materials for use with vocational students.
- *Instructional Assistance in Specific Basic Skills* prepares vocational teachers to help students gain reading, writing, oral communication, and math skills.

The National Center wishes to acknowledge the leadership provided to this effort by Dr. Robert E. Taylor, recently retired Executive Director. Appreciation is extended to the following individuals who served as a panel of experts to assist staff in planning strategy and recommending document content: Eugene Bottoms, Consultant to the Southern Association of Colleges and Schools; Michele Brown, Vocational Supervisor, Idaho Falls School District, ID; Alton Crews, Superintendent, Gwinnett County Public Schools, GA; Roger Faulkner, Instructor-Coordinator, Great Oaks Joint Vocational School District, OH; and Darrell Parks, Director, Division of Vocational and Career Education. Appreciation also is extended to Ken Berger, Pioneer Joint Vocational School, Shelby, OH; Lucille Thrane, Consultant to the Ohio Advisory Council; and Harry Drier of the The National Center for their critical review of the document.

Special recognition is due the following National Center staff who played major individual roles in the development of the **BASICS** package: Richard J. Miguel, Associate Director for Applied Research and Development, and Michael R. Crowe, Project Director, for leadership and direction of the project; Sandra G. Pritz, Senior Program Associate, Judith A. Sechler, Program Associate, and June Veach, Graduate Research Associate, for synthesizing and developing the documents; and Deborah Black for word processing the documents. Appreciation is extended to The National Center editorial and media services personnel for editorial review, graphics, and production of the documents.

Chester K. Hansen
Acting Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

An Academic Development Plan (ADP) is an individualized plan for a student's academic progress worked out cooperatively by the student and several of those involved with helping the student learn. The major thrust of the ADP concept is to respond to the obvious need to help students strengthen their basic skills and academic achievement. The response strategy is systematic individualized planning through the joint efforts of vocational and academic teachers who, along with others, can form a team to assess the individual student's skill levels and combined needs.

The planning efforts can be made concrete by the completion of the ADP form, which is a vehicle for sharing information, monitoring, and updating. The ideal is to have the student assume major responsibility for completion of the form, which can be viewed as similar to a behavior contract. The ADP process is discussed in this document task by task, with related parts of the form specified for each task.

The first task for the ADP team is to prepare to develop ADPs. They need to consider how to best gather information about the factors influencing a student's academic development. The following factors are discussed in the context of this task, with additional information provided in appendices: academic skill levels, learning style, sex equity, and special considerations for handicapped youth, minority and immigrant youth, gifted and talented youth, and migrant youth.

The actual ADP development begins with gathering data and recording preliminary information on the form. This paves the way for sharing the information with the team to use as a basis for planning.

The next task is to analyze the student's needs and design a plan to address them. A facilitator initiates this task by arranging for an ADP planning meeting. At this meeting, through joint and systematic review and discussion, an action plan is formulated. The action plan includes annual goals, short-term objectives, evaluation procedures and criteria, recommended activities, and plans for monitoring.

Once the plan and the pattern of responsibilities have been worked out, the plan is put into action. The individual student knows what to do, and is supported by others on the team who are aware of the student's goals and who have support roles to play. The student's progress is monitored to see that the plan is being implemented effectively.

The final task is to review and revise the ADP at least annually. Goals and objectives that have been attained can be used as a foundation for planning continued progress and academic growth.

Overall, this Targeted Teaching Technique focuses attention on the significance and effectiveness of a team working with individual students. A systematic procedure is presented for converting this concept from an abstract idea into a concrete program.

Introduction

What Is an ADP?

An Academic Development Plan (ADP)* is an individualized plan for academic progress worked out cooperatively by the student and several of those involved with helping the student learn. The major thrust of the ADP concept is to respond to the obvious need to help students strengthen basic skills and academic achievement. The response strategy is systematic individualized planning. The ADP was developed with vocational students in mind, but it is suitable for all students, regardless of their program. Some schools have begun by using an ADP approach with a targeted group of students, such as those identified as dropout-prone.

Because effective applied learning can and should take place in a variety of settings, the efforts of several people should go into the plan. The ADP is a process by which vocational and academic teachers, along with others, can sit down with a student to consider that individual's combined needs.

The process of developing the plan is the heart of the ADP's benefit, as the ADP depends on assessing a student's skill levels and analyzing the student's needs as a basis for formulating the plan. Completion of the ADP form then makes the plan concrete and provides a vehicle for sharing information, monitoring, and updating. The ADP form, presented in appendix A, should now be examined briefly to visualize what an ADP involves.

This Targeted Technique Guide will discuss the process for developing the plan and completing the ADP form. Educators are urged to consider the ideas presented regardless of whether their school is in a position to fully implement an ADP program. Importance is attached to initiating action and moving in the general direction of the ADP concept. While this guide can help in initiating action, school personnel must work out how to best institutionalize it in their own school. Some schools have begun by using an ADP approach with a targeted group of students, such as those identified as dropout-prone. The ADP can probably be most successful if it is woven around current school practices rather than approached as a new program lay-on.

Why an ADP?

The rationale for an ADP can perhaps best be described in terms of its older, proven, relative, the individualized education program (IEP).

The legislative provision for the IEP has been described as the most challenging educational mandate in recent history. This landmark legislation assures that all

*Designed and developed by the authors; copyright is claimed by The National Center for Research in Vocational Education

> handicapped individuals ages 3-21 will receive a free and appropriate public education designed to meet their individual and unique education needs. IEPs are the vehicle for establishing an appropriate educational program for each handicapped learner. The IEP is the basic document used to design, implement, and evaluate the educational services a child receives. While the primary intent of the IEP is to promote educational planning for handicapped learners, many argue that it has major implications for the design and delivery of instruction for all students. (Phelps and Batchelor 1979, pp. ix, 1)

As with many other challenging mandates, the IEP does not, in practice, always live up to the promise. But the challenge is valid because it makes explicit a sound educational premise that applies to all students: that each is unique in the combination of his/her goals, interests, abilities, aptitudes, and needs. If a goal of education is to make available an appropriate program for each of these unique individuals, then it makes sense that planning take place on an individualized basis. It behooves those who are involved with an individual student to cooperate in planning a program to meet his/her needs.

Certainly educators try to be aware of their students' needs on a continuing basis, but these needs are not restricted to the one area of a particular educator's involvement. They spring from a total, integrated person. Furthermore, the education that students need to function effectively in the world of today and tomorrow is an integrated education. It is clear from the barrage of warnings by business, government, and educational groups in the past several years that students need, and will increasingly need, greatly strengthened academic skills along with an enlarged capacity to apply those skills to solving vocational problems. A 1986 Lou Harris poll of adults and top business executives conducted for the Carnegie Forum on Education and the Economy found the following:

> Americans believe that students will need more than basic skills in the years ahead if the country is to gain a competitive edge worldwide. Eighty-seven percent of business executives and more than 90 percent of the public polled believe that all students, not just those that are college bound, will need to 'write and reason well, really understand math, science and technology and be able to use what they know, understand our complex society in order to be effective citizens, learn how to figure out what they need to know and how to find it out, and be educated people who can figure their way creatively through tough problems.' (Teske 1986)

This is a challenge that requires cooperation, but the cooperative effort must be focused on what will work for individual students.

Although it would be possible to formulate a plan based on consideration of the student's abilities and needs without writing it down, there are a number of advantages to having a written Academic Development Plan (ADP). Since the student is involved in the formulation of the ADP, it takes on the nature of a behavioral contract with the following benefits (Meyer 1978):

- It provides a written record of the decisions made and the course of action to follow.
- It serves as a motivational device.
- It provides the student with a sense of progress, especially if it is broken down into segments with evaluation after each segment.
- It encourages the student to assume responsibility for his/her learning.
- It provides a vehicle for periodic evaluations.
- It treats the student as a responsible person.

The details of a model Academic Development Plan will be discussed in Tasks 2 and 3. The basic components should include the following:

- A statement of the present levels of educational performance of the student
- A statement of annual goals, including short-term instructional objectives for each student

- Appropriate objective criteria and evaluation procedures and schedules for determining, at least on an annual basis, whether instructional objectives are being achieved.

The ADP Process

The objective is to develop a conscious plan for the academic development of each student. For such an idea to be feasible, a systematic process must be in place for a joint effort that capitalizes on what each person can contribute without causing an undue burden on anyone. Once the process is underway, an objective is to have the student assume more and more responsibility.

Those who can contribute to the ADP include, in addition to the student, academic and vocational teachers, school counselors, parents, and, sometimes, employers and friends. It is especially helpful if the counselors are involved because of the nature of their experience and training, plus previous involvement with the IEP process. The process depends on a joint effort to formulate and implement the plan, and the success of the effort depends on communication.

The model ADP process to be presented here requires, as the next task, that those involved prepare to develop ADPs by considering the salient factors that influence students' academic development. Information is presented at an overview level in ADP Task 1, and specific data about assessment, learning styles, sex equity, and special populations is located in the appendices. The task structure for the ADP process, which is also the outline for this Targeted Technique Guide, is shown in figure 1. Figure 2 shows how the tasks in the ADP process link up with completion of parts of the ADP form.

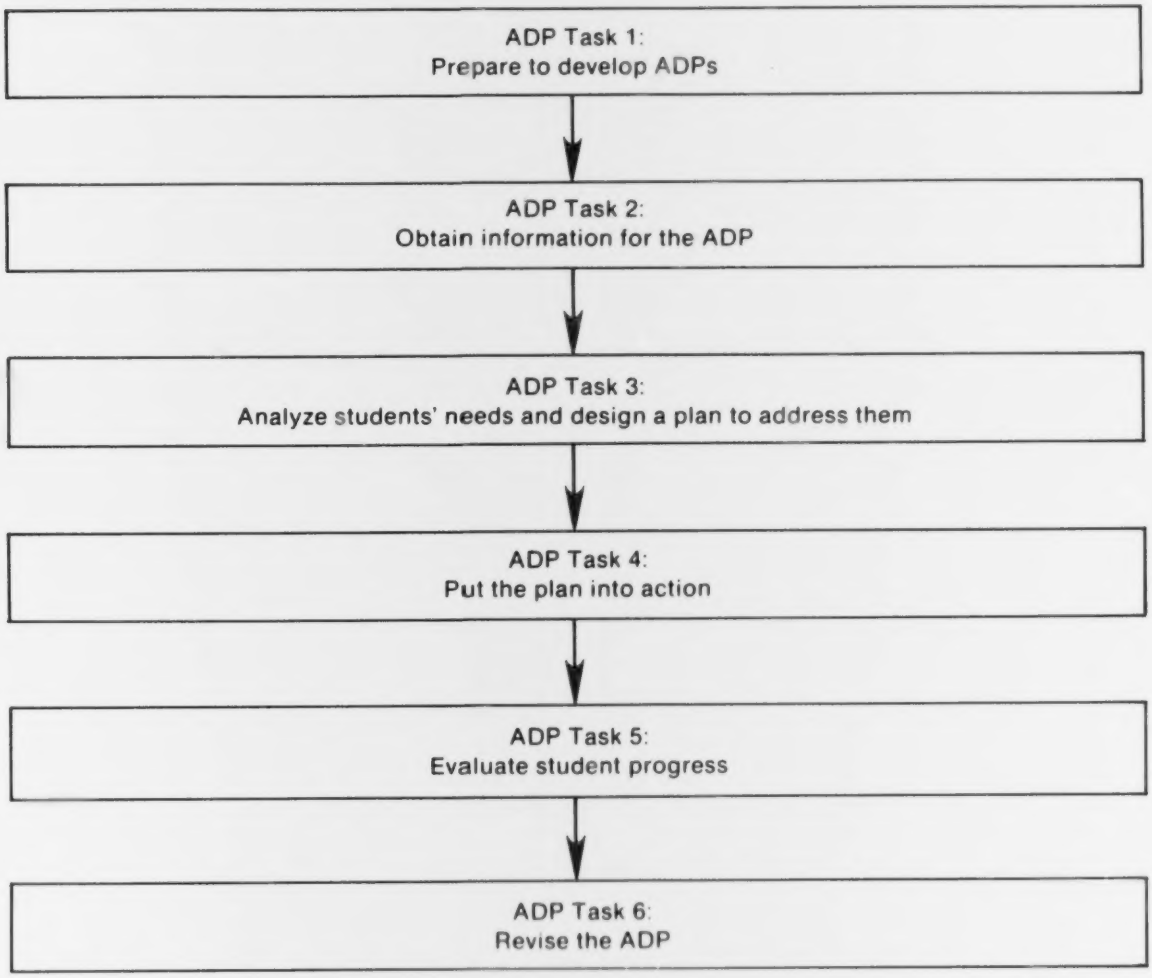
ADP Task 1:
Prepare to develop ADPs
ADP Task 2:
Obtain information for the ADP
ADP Task 3:
Analyze students' needs and design a plan to address them
ADP Task 4:
Put the plan into action
ADP Task 5:
Evaluate student progress
ADP Task 6:
Revise the ADP

Figure 1. Planning for Academic Development Plan action

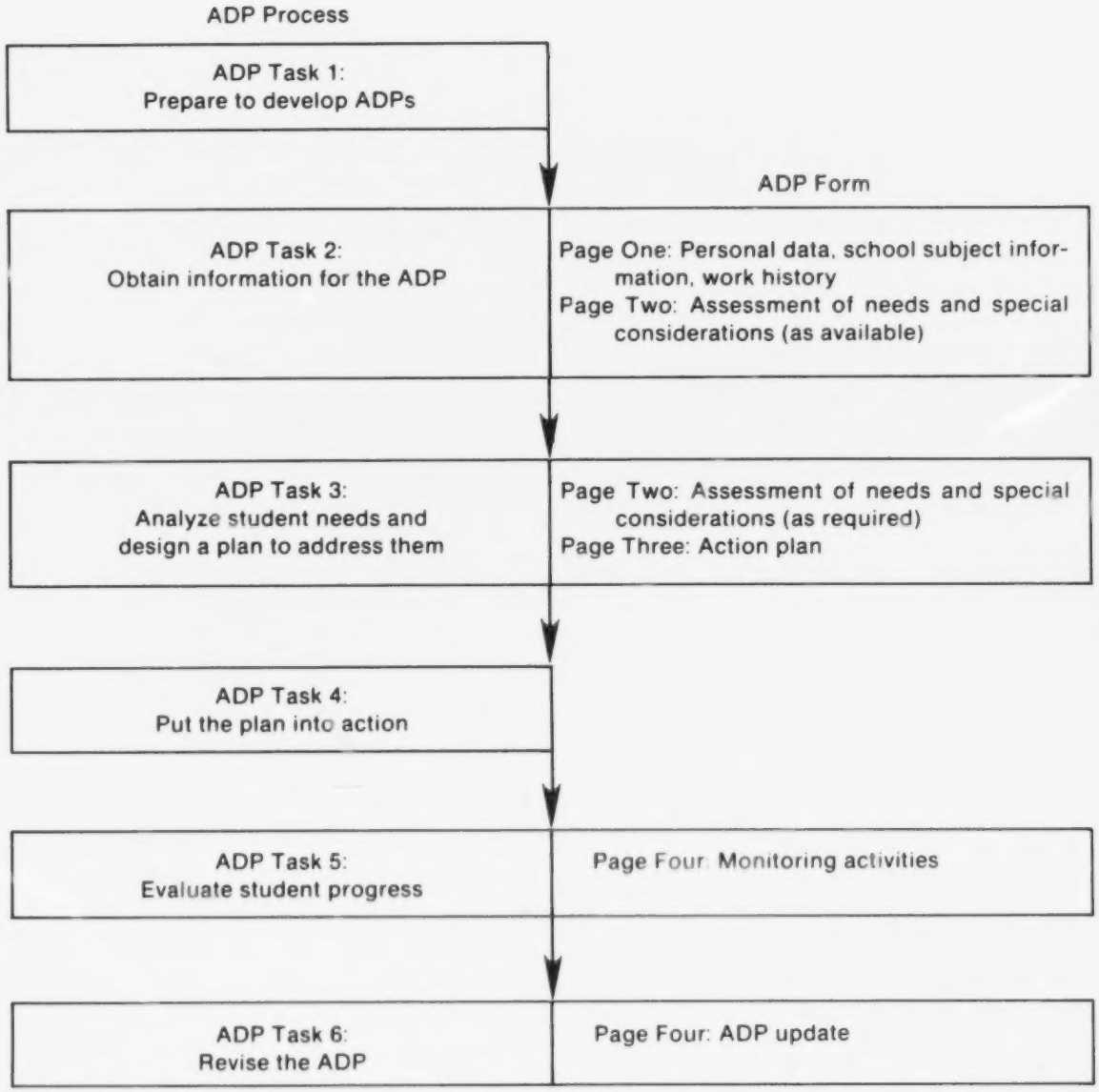
ADP Process
ADP Task 1:
Prepare to develop ADPs
ADP Form
ADP Task 2:
Obtain information for the ADP
Page One: Personal data, school subject information, work history
Page Two: Assessment of needs and special considerations (as available)
ADP Task 3:
Analyze student needs and design a plan to address them
Page Two: Assessment of needs and special considerations (as required)
Page Three: Action plan
ADP Task 4:
Put the plan into action
ADP Task 5:
Evaluate student progress
Page Four: Monitoring activities
ADP Task 6:
Revise the ADP
Page Four: ADP update

Figure 2. Linking the ADP process to the ADP form

ADP Task 1: Prepare to Develop ADPs

- Assess academic skill levels
- Determine learning style
- Ensure sex equity
- Take account of special considerations
  - handicapped youth
  - minority and immigrant youth
  - gifted and talented youth
  - migrant youth

A number of factors influence students' academic development. The most important of these need to be considered in preparing to develop Academic Development Plans. The objective is to draw, for each individual, a profile of the student's current academic status, needs, interests, abilities, and goals. This profile provides the necessary backdrop for identification of activities that will contribute to the student's academic development.

Those involved in developing ADPs need to determine what information to gather for such a profile, and they need to initiate a systematic process for gathering that information. The process should be efficient (not administratively burdensome) yet take into account the salient factors affecting the student's academic progress. Information already available within the school should be used, and any process already in place for gathering information should be built upon. The following factors should be considered:

- Academic skill levels—current and needed
- Learning style
- Sex equity
- Special considerations

Discussion of each of these factors follows.

Assess Academic Skill Levels*

A determination must be made of the student's current academic status compared to what is required for the student's school program. Ideally the assessment of basic skills will point to specific strengths and weaknesses to be targeted for instructional planning.

Diagnostic Tests

Proficiency levels may be determined through scores on standardized achievement tests or performance tests given for the purpose of problem diagnosis. Care should be taken that tests used for this purpose are valid, reliable, and appropriate for both the purpose and the student. However, what is most feasible in the beginning for an ADP development program may be the use of scores on tests already being given in the school. These scores can be reviewed relative to the ADP to see how well they fit the ADP context. This procedure will ease the process of initiating ADP development. After the program is well under way, a reassessment of the choice of testing instruments can be integrated with regular school planning.

*Some of the information in this section is from BASICS' *Improving the Basic Skills of Vocational-Technical Students: An Administrator's Guide*.

Many different testing instruments are available for basic skills, although not all serve the special purposes of diagnosis. To be useful for diagnosis, tests must provide scores that can be related to explicit objectives for targeted teaching—not just give a grade-level equivalent.

Information from a teacher resource guide about available tests and selection criteria is reprinted in appendix B. The information is offered as an overview that can be helpful when a selection of diagnostic tests is feasible. The information is provided as a starting point for a topic that is complex in nature.

Occupational Area Competency Profiles*

In addition to diagnostic testing results, it is helpful to have specific information to compare the student's basic skills with those considered important in the targeted occupational area.

Occupations vary in the importance placed on various types of basic skills. Certain jobs rely heavily for instance, on listening and speaking. Others use reading and writing. Similarly, mathematics requirements vary greatly across occupations.

Basic academic skills cover a wide range from reciting the alphabet to the solution of mathematical equations. The most efficient use of resources will be insured by focusing only on those skills relevant to success in a particular occupational area or job, and those for which students show a need for instruction.

Identification of job-related academic skills is important for a number of purposes, two of which are assessment and curriculum development. Many teachers will have gone through this identification process and can build and adapt from the way their information is already organized and formatted. Discussion of how to cross-correlate occupational tasks and academic skills for purposes of curriculum development is contained in BASICS' *Instructional Materials Development*, and a sample matrix for organizing the information is provided there. That matrix could be adapted for use as a student academic skills profile as well.

Another sample matrix is presented here as figure 3 (this sample is completed as a cross-correlation of academic skills and occupational duties for a baker). Here the degree of importance of an academic skill in the performance of a job duty is registered. A numerical scale for degree of importance could also be used. Blank matrix forms are included as appendix C. Once the occupational and academic skills have been cross-correlated, teachers can rate any student's skills on a blank copy of the same matrix. Teachers may want to involve the student in these ratings.

The Illinois State Board of Education (Greenan 1984, 1985) has published a set of matrices correlating math and communications skills with occupations in five vocational training areas. Student self-rating and teacher rating instruments to assess generalizable math and communications skills are provided for diagnostic and prescriptive purposes.

Use of the same matrix for planning a course and reporting student skills ensures consistency. The particular academic skills used on the sample matrix are subject to revision and/or expansion for any specific occupation.

The matrix profile of occupational tasks and basic skills can provide information useful for reporting student achievement. The profile can serve as a checklist to record student progress. This can then be summarized on an employability form which students can take with them on job interviews.

In summary, those involved in developing ADPs should use both the available diagnostic test information about students' academic skill levels and some form of competency profile that relates their academic skills to their occupational program. This process will enable them to compare current skills with those needed and will provide a solid basis for planning.

*Much of this section is adapted from Dunn (1982, pp. 14-15).

Vocational Area: Trade and Industrial Completed by: Leslie Shore

Program Course: Food Service Date: September 29, 1981

Job Title: Baker

Job Duties	MATHEMATICS: Arithmetic Computation: Whole Numbers	Fractions	Decimals	General Mathematics: Measurements	Numerical Relations and Equivalents	Simple Linear Equations
A-1 Clean premises				important		
A-6 Handle and store supplies and equipment	very imp.	important		very imp.		
B-1 Prepare and bake yeast doughs				very imp.	important	
B-2 Prepare cookies, pie crust, French pastry				very imp.	important	
C-1 Select various types of flour for mixes						
D-1 Order supplies	very imp.	important			very imp.	
D-2 Receive, store, and disburse supplies/ products	very imp.	very imp.			important	

Job Duties	READING: Informational: Facts	Instructions	Ideas	Critical: Infer Meaning	Generalize	Detect Fallacy and Persuasive Intent
A-1 Clean premises						
A-6 Handle and store supplies and equipment	very imp.	very imp.		important		important
B-1 Prepare and bake yeast doughs					important	
B-2 Prepare cookies, pie crust, French pastry					important	
C-1 Select various types of flour for mixes	very imp.	important			important	
D-1 Order supplies	very imp.					important
D-2 Receive, store, and disburse supplies/ products	very imp.					

Figure 3: Sample basic skills/job duty forms: trade and industrial—Baker.

Adapted from Dunn (1982, pp. 16-21).

Job Duties	ORAL COMMUNICATIONS					
	Listening Comprehension			Language Usage		
	To Comprehend Literal Meaning of Message	To Infer Meaning or to Generalize	To Detect Inconsistency Fallacy or Persuasive Intent	Selecting Words	Speaking Face to Face	Speaking Over the Telephone
A-1 Clean premises	very imp.	Important			very imp.	
A-6 Handle and store supplies and equipment	very imp.			very imp.		
B-1 Prepare and bake yeast doughs	very imp.	Important			very imp.	
B-2 Prepare cookies pie crust French pastry	very imp.	Important			very imp.	
C-1 Select various types of flour for mixes	very imp.	Important				
D-1 Order supplies	very imp.			very imp.	very imp.	
D-2 Receive store and disburse supplies/ products	very imp.			Important		

Job Duties	WRITING									
	Structure of Written Messages			Mechanics				Word Selection		
	Key Words and Brief Notes	Outlines Phrases Sentences and Paragraphs	Letter and Other Formal Messages	Capitalize	Punctuate	Write Legibly	Spell	Alphabetize	Grammar	Diction
A-1 Clean premises										
A-6 Handle and store supplies and equipment										
B-1 Prepare and bake yeast doughs										
B-2 Prepare cookies pie crust French pastry										
C-1 Select various types of flour for mixes										
D-1 Order supplies	very imp.					very imp.	Important			
D-2 Receive store and disburse supplies products	very imp.					very imp.				

Figure 3—*Continued*

Job Duties	SCIENCE Scientific Method State Hypotheses	Use Equipment	Measure	Gather Data	Draw Conclusions	Relate Principles to Vocation
A-1 Clean premises						
A-6 Handle and store supplies and equipment		very imp.				
B-1 Prepare and bake yeast doughs			very imp.			
B-2 Prepare cookies, pie crust, French pastry			very imp.			
C-1 Select various types of flour for mixes					Important	
D-1 Order supplies						
D-2 Receive, store, and disburse supplies products						

Figure 3—*Continued*

Determine Learning Style

As teachers have worked toward finding the most effective instructional methods, they have consistently been confronted with individual differences among students—what works to help one student learn may not work for another.

Some of these individual differences in cognition have come to be called *cognitive styles*. These cognitive styles seem to develop slowly through experience before becoming automatic ways of processing information. The attempt to apply research findings about individual differences in cognition to the question of effective instructional methods has led to the concept of learning styles. Keefe (1979) describes learning styles as "characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p. 4).

For purposes of helping a student maximize academic development, it is helpful to have some information about that student's learning style. Appendix D gives information about teacher diagnosis of learning style and corresponding teaching techniques.

It should also be recognized that, although the term "learning style" is relatively new, good teachers have been working to assess it in their students for a very long time through careful observation. Informally gathered learning style information is often the basis for immediate adjustment of teaching in the classroom. While informal observation may yield somewhat less accurate information than a formal diagnosis, it is still valid and should not be discounted.

Since teachers may tend to teach the way they themselves learn, it is helpful for teachers to be aware of their own learning style. One reason is that "students and teachers whose cognitive styles are matched tend to judge each other (in regard to affect and ability) more highly than those who are unmatched" (Kirby 1979, p. 42). Awareness of this tendency can

help teachers try to be conscious of how they judge students.

If both teachers and students are knowledgeable about their own and each other's styles, they can try to adapt them so as to enhance learning. According to Cornett (1983):

> Once teachers gain an appreciation of the variety of learning styles, they can respect learning style differences and adapt their teaching styles for different situations. They may also be alert to situations in which students' learning styles limit their success in academic areas. For example, with strongly right-brain learners who may have difficulty memorizing, the teacher might suggest alternatives to the rehearsal method or memorizing, using visual image mnemonic techniques.
>
> It would be unrealistic as well as undesirable, to match learners with teachers, based on their learning styles, all the time. Rather, we should encourage the "flexing" capabilities of both teachers and students. The process of having students gradually become more adept at adjusting learning style to teaching style and task has been labeled "learning-to-learn." Once students learn how to learn, they can transfer this ability to all learning situations and become increasingly less dependent on a teacher.

Additional information about learning style is contained in BASICS' *Learning/Teaching Styles*.

Ensure Sex Equity

Sex equity is an important consideration when preparing to discuss a young person's future plans and how to help him/her achieve the fullest potential. Occupations and social roles have long been defined and discussed on the basis of sex, and these deeply ingrained patterns are slow to change. The pattern limits the occupations presented as viable to both females and males, and this in turn affects academic choices, goals, and incentives for both females and males.

In addition, particular subjects have often been presented as more suitable for either males or females, and biases have been fostered about their ability to achieve in these subjects. For example, a girl's incentive to achieve in mathematics is damaged if she is told that "girls don't do as well as boys in math, but it's all right because they don't need to." [Actually, controversy surrounds statistics indicating superior male achievement in math, which are rarely adjusted for the smaller number of math courses taken by girls—often due to peer or family pressure to discontinue math studies when they become optional at 10th or 11th grade (Baker 1986).] Similarly, a boy's writing efforts may flag if he hears that "women just have a way with words." This negative effect on individual academic development is compounded in the aggregate with many undesirable implications for society.

All those involved in helping to prepare ADPs should have a high awareness of sex equity as an important issue in academic development. They should stand ready to counter biases and myths as they come up in discussion, and they should even do what they can to dispel erroneous ideas that may be left unspoken. Such ideas continue, at least implicitly, in many of the academic and vocational materials used in schools. A summary of sex equity principles is provided in appendix E for use by those involved in the ADP process.

Take Account of Special Considerations

The previous discussion involved a number of factors to consider in preparing to develop an ADP: need to assess the student's skills levels, the student's learning style and the need to consider it when selecting instructional activities, and the need to ensure sex equity when students choose academic courses or occupations. Other special considerations may influence a student's academic development. Information follows about these considerations: handicapped youth, minority youth, immigrant youth, gifted and talented youth, and migrant youth. Additional information is contained in BASICS' *Special Populations*.

Handicapped Youth

Any of a variety of handicapping conditions may be present. Public Law 94-142 defines "handicapped children" as those ages 3 through 21 who are evaluated according to the regulations and who, as a result, are found to be—

- mentally retarded,
- hard-of-hearing,
- deaf,
- speech-impaired,
- visually handicapped,
- seriously emotionally handicapped,
- orthopedically impaired,
- blind,
- specific learning disabled, or
- other health impaired.

Because of the unique needs of handicapped students, a National Center document designed to assist teachers in meeting their needs is reprinted as appendix F. This appendix should be consulted when preparing an IEP for a handicapped student. The IEP, if comprehensive enough, would preclude the need for an ADP for these students. The appendix contains specific information for each of the handicapping conditions listed above and provides possible adjustments that may be required in vocational programs.

Minority and Immigrant Youth

Although immigrant and minority youth have some of the same difficulties with schooling typical of low SES majority-group youth, other issues in education are peculiar to immigrant and minority youth and arise because of their special circumstances. Among the important educational issues are such factors as language instruction, underachievement, individual learning styles, curriculum, tests, the organization and procedures of schools, and the training of teachers and administrators. In addition, attention must be given to the relationships between school, home, and community, and the specific role of youth. These factors are discussed in appendix G.

Gifted and Talented Youth

> "Gifted and talented" means children and where applicable, youth, who are identified at the preschool, elementary, or secondary level as (1) possessing demonstrated or potential abilities that give evidence of high performance capability in areas such as intellectual, creative, specific academic, or leadership ability or in the performing and visual arts; and (2) needing differentiated education or services (beyond those being provided by the regular school system to the average student) in order to realize these potentialities. (Federal Register May 6 1976, p. 18666)

The 1976 definition suggests that educators should individualize programs to accommodate gifted and talented students in all program areas. This may include differentiated programming, including additional content in the curriculum. This is critical to the effective instruction of gifted and talented students who lose interest in school when they are forced to work with a group whose learning style is different, usually slower, than their own. Pacing is an obvious

response to the need for individualization, because it enables students to pursue individual interests and complete assignments at their own rate.

Modification of instruction for gifted and talented students is ultimately the responsibility of classroom teachers. Teachers can contribute to gifted and talented student performance by such practices as (1) caring about the gifted student as a whole person, (2) treating the student more as a peer than as a subordinate, (3) providing more freedom (less structure) for gifted and talented students, and (4) being willing to accommodate students' interests and aspirations rather than focusing solely on content. Additional information about individualizing and differentiating programs for the gifted and talented is provided in appendix H.

Migrant Youth

Less than 1 percent of all migrant youth registered in school in the United States are enrolled in vocational education programs. Vocational education is not generally regarded as desirable among minority populations, migrant youth in particular. Minority group parents generally prefer a college preparatory curriculum for their children because they believe that vocational education is for students of low ability. The limited number of bilingual vocational education programs is also acknowledged as a major factor contributing to the lack of participation by Mexican-American youth, including migrants.

Innovative programs which include the following elements are needed to meet the vocational needs of migrant youth: development of (1) communication skills, (2) basic skills, (3) a positive self-concept, and (4) a future-orientated attitude. The ADP can be the vehicle for providing these programs. Further, an element of continuity in the youth's academic life can be provided if the youth carries his/her ADP from one schooling situation to another. Appendix I contains additional information about the needs of migrant youth.

Summary

It must be obvious at this point that preparation to develop ADPs involves a significant effort on the part of all who participate to become aware of the factors that influence the individual needs of students. However, the development of such an awareness has importance for educa- s that goes far beyond the development of an ADP, so the effort is worthwhile in a broader context. Once the background preparation has been accomplished, succeeding tasks for developing the ADP are straightforward.

ADP Task 2: Obtain Information for the ADP

- Gather the data
- Record preliminary information on the ADP form

The successful formulation and implementation of the ADP requires cooperative effort. Several people need to contribute information. The composite of this information is the basis for developing the plan. A sample ADP form is presented in appendix A. The form indicates the information that should be obtained for each student.

Gather the Data

Those spearheading the ADP program need to establish how the required data can be gathered most efficiently. In many schools, much of this data is already reported in some way. Grades and test scores are available, and reports of learning style or psychological evaluation are in the student's guidance file. Such data simply need to be centralized if they are not in one place already.

Information not readily at hand is likely to be of an informal assessment nature—insights from teachers and counselors, for example. To obtain this information, a preliminary meeting may be conducted at which those with the greatest involvement with the student can share insights. An alternative is to ask for written comments to be submitted.

In some schools the decision will be made to reassess the effectiveness for ADP purposes of the diagnostic tools in current use. A small group of educators should participate in the determination including an academic teacher, a vocational teacher, and a counselor. Counselors, having a range of sources for standardized tests, can select instruments or provide helpful guidelines regarding administration and scoring procedures, norms, reliability, and validity. Teachers are able to judge whether particular tests adequately reflect achievement in their content areas.

While the ADP tasks involve a cooperative effort, one person needs to be designated as the facilitator for each ADP. The facilitator is responsible for—

- checking that existing recorded student information is gathered in one place,
- arranging to obtain additional information through a preliminary staff meeting or request for written comments,
- arranging for recording information on a draft ADP form, and
- arranging a meeting to analyze student needs and design a plan to address them.

Record Preliminary Information on the ADP Form

The ADP Form as a Whole

The ADP form provided as a sample in appendix A can be duplicated for immediate use if it is suitable for the school's program or it can be adapted. For example, if test information is already centralized, recording it again on the ADP form may not be necessary. Furthermore, as with all written data, confidentiality is very important. In deciding how the information will be handled, district practices regarding confidentiality must be followed.

One option to consider is duplication of the form onto a manila folder for each student. The folder provides a durable record which can be used to hold ongoing progress reports and supplementary information.

The following sections discuss the various sections of the form incrementally.

Page 1: Personal Data, School Subject Information, and Work History

The student should be responsible for recording preliminary information on the first page of the form. Some may need assistance in filling out the form at the outset, but it is important that they be given the experience. First of all, it is suitable for the student benefiting from the plan to perform the task. This relieves busy school personnel who would otherwise be called on. In addition, the student will develop a needed skill, as the ADP form is not greatly different in nature from an employment application.

If feasible, an aide trained by a counselor might initially provide help to students who need it. This process gives the students a brief orientation and enlists their active and enthusiastic cooperation. The ADP process should be explained briefly so the student will know what to expect.

A sample of page 1 is provided in figure 4. This part of the form is largely self-explanatory. The student should know the factual information. If not, most of it would be available in school records. An exception might be employer information. The student can be asked to find out this information at home, if necessary.

The interest items on school subjects and jobs will be readily answered by some students. Others who are less analytically inclined may need some guidance to work through their responses. (*Determine Needs and Interests of Students* Module B-1 of the Performance-Based Teacher Education Modules published by The National Center for Research in Vocational Education 1977, provides information on this topic.) Part of the benefit of the response is to show students that their experiences provide information helpful for future planning, if they follow through on analyzing it. The "best" and "least" terminology pushes students with few positive feelings to look for what is *relatively* positive in their experience, and it pushes those with mostly positive feelings to be discriminating.

Some students, especially those who have had little exposure to options, may have difficulty answering the last two questions about courses they would like to take and their job goals. These questions can motivate them to seek information about options, which in turn can be used as a springboard for counselors and teachers to offer such information. It is also important to tell students that definite choices are not required at this time, and that any choices they do make should be considered tentative.

Student's Name: _____ Program: _____

Grade: _____ Coordinating Teacher(s): _____

Birth Date: _____ Counselor: _____

Present Date: _____ School: _____

Parent/Guardian: _____ Address: _____

City: _____ Zip: _____ Phone: _____

SCHOOL SUBJECT INFORMATION

Favorite school subject(s):	School subject(s) most disliked:
School subject(s) in which you did best:	School subject(s) in which you did least well:

WORK HISTORY—List most recent employment first—Use additional sheets if needed

Employer Name and Address	Employed From:	To:	Job Held (cite special skills required):

Which of your past jobs did you like most? Why?	Which of your past jobs did you like least? Why?	What job skills do you have?

What academic or vocational courses would you like to take?	What are your job goals after high school?

Figure 4. Academic Development Plan, page 1

Page 2: Assessment of Needs

Tests already administered and evaluations already completed can be recorded by the facilitator at this stage of the process. Figure 5 shows the part of the form used for recording these data. It would not be expected, however, for tests or evaluations in all categories to have been administered, nor would they necessarily be recommended. This is simply a place to gather and identify data for synthesis, within confidentiality guidelines.

The facilitator should decide whether the tests and evaluations completed are adequate for useful planning. If not, the facilitator should make recommendations for others that will be, and take the necessary steps to plan for them. This may mean, for example, simply registering the student's name with the counselor for the next basic skills test being administered, or submitting a request to the speech therapist for an evaluation.

When all the tests and evaluations have been completed, the facilitator can record the results in the "Summary of test results and their implications" space shown in figure 6. If the facilitator is not a counselor or another person trained in test interpretation, consultation with a counselor would be important.

The facilitator should seek information from academic and vocational teachers for the "summary of course performance information" space shown in figure 6. If a preliminary meeting is to be held, this is the time to obtain the information. Otherwise, written information can be requested. The teacher(s) responsible for generating the cross-correlation of skills for the student should submit this for incorporation into the summary. A transcript of the student's course performance should also be included.

Page 2: Special Considerations

The facilitator should record on the left side of the section, shown in figure 7, any known information about problems that the student faces. A health problem or a physical handicap will sometimes be apparent from the evaluations performed. Other information may be obtained from school records. However, some information in these categories may not be formally recorded. Information from long-term observation should be included here. For example, if a teacher has noted that a student frequently asks to be excused from class because of feeling ill, this should be noted for investigation of a possible health problem. However, it would not be suitable to include information that is speculation or hearsay.

Information about special programs and services currently provided to the student can be recorded on the right side of the "Program and Services" area, second column. (See figure 7.)This information should already be a matter of record. Tutoring provided on an informal basis may not be evident from the record, but a teacher will usually be aware of it.

The remaining items on page 2 of the ADP form should be left blank, awaiting the analysis and planning stages.

ASSSESSMENT OF NEEDS—ADD TRANSCRIPT AND SKILLS CROSS—CORRELATION

Tests administered: (list)	Tests recommended: (list)	Evaluations Completed		
☐ None	☐ None	Medical	☐ Yes	☐ None
☐ Interest	☐ Interest	Psychological	☐ Yes	☐ None
☐ Achievement	☐ Achievement	Speech	☐ Yes	☐ None
☐ Aptitude	☐ Aptitude	Hearing	☐ Yes	☐ None
☐ Learning Style	☐ Learning Style	Visual Testing	☐ Yes	☐ None
☐ Basic Skills	☐ Basic Skills	Orthopedic	☐ Yes	☐ None
		Other	☐ Yes	☐ None
☐ Other (specify)	☐ Other (specify)	Evaluation Data Adequate	☐ Yes	☐ No
		Specify Needed Data		

Figure 5. Assessment of needs

Summary of test results and their implications:

Summary of course performance information:

Figure 6. Summary information

Special Considerations

- ☐ Personal problems
- ☐ Health problems
- ☐ Physical handicap
- ☐ Limited English proficiency
- ☐ Other (specify)

PROGRAM & SERVICES	Check if Currently Provided	Check if Needed	Comments
Basic Skills Class			
Tutoring			
Vocational School			
Home School			
Transportation			
Home Instruction			
Speech & Hearing			
LEP Class			
Other			
Other			

Figure 7. Special considerations

ADP Task 3: Analyze Students' Needs and Design a Plan to Address Them

- Arrange for an ADP planning meeting
- Formulate the action plan

Once the preliminary information has been gathered and recorded, the draft of the first two pages of the form should be shared with the entire ADP team (again, within confidentiality guidelines and depending on who the team members are). The team will then discuss the student's needs and design an action plan to address them.

Arrange for an ADP Planning Meeting

Form ADP Team

The ADP team should include people who have been directly involved with the student and can contribute to the student's academic development. The student should participate personally on the team so as to develop a sense of ownership of and commitment to the resulting plan. (However, depending on the sensitivity of any information to be discussed at the planning meeting, the facilitator may decide to have the student not be present for the entire meeting.)

The facilitator is the team leader, but is also likely to be the student's counselor or teacher, and so will play a dual role. The remaining positions on the team will need to be decided partly on the basis of availability, the staffing situation at the school, and time to be committed to the ADP program, and partly on the student's situation. It is highly desirable that a counselor be involved on the team. Counselors' expertise in evaluation, planning, and facilitating is valuable for the ADP program. (Further discussion of this point is in the BASICS' introduction to the counselor support role, *Provide for the Basic Skills*.) However, in a school where the counselor is heavily burdened with a large guidance caseload of a problematic nature, this may not be immediately possible. This fact should not preclude initiating the ADP program but should indicate the need to begin with what is practical and work toward the ideal. The counselor may be able to participate on certain ADP teams, perhaps those for students with the most clearly defined basic skill needs or the most significant barriers to academic achievement. Since the counselor is likely to be spending an appreciable amount of time on behalf of those students anyway, participation on their ADP team actually represents an opportunity to work more effectively to meet the student's needs because of the joint effort involved.

The coordinating teacher in charge of the student's major program is important to the team. For example, a vocational student in the Auto Mechanics Program should have the teacher in charge of that program on the team. If

only one vocational teacher is to be involved, the teacher in charge would be in the best position to solicit input from the other teachers in that program.

Given the academic focus of the ADP program, an academic teacher who is involved with the student should be on the team. The selection of the academic teacher could be determined partly by the nature of the student's vocational program. Most vocational programs involve a variety of academic skill areas, so it is important here also to solicit input from teachers in all these areas. Because some programs draw more heavily on one academic skill area than another, it would be suitable to select a teacher from the area of greatest importance. For example, a drafting program relies heavily on mathematics and a secretarial program on English.

The student's parents or guardian should be invited to join the team. Their unique perspective on the student can be invaluable, and their participation provides an important opportunity to involve them in the school program and to enhance school-home communication. Since there is widespread evidence that what is done at home to support education can greatly improve student achievement, parents' understanding of the student's academic goals and objectives is of consequence.

In certain situations, other individuals may be able to contribute to the student's academic development: special services personnel, an employer, a community agency representative, or a close adult friend. A balance should be maintained between keeping the team a workable size and obtaining significant input for the student. An option is to ask for input from some people who are not included on the team. Figure 8 shows potential members to select from to form the ADP team to plan for the student's academic development.

Plan the Meeting

The facilitator should arrange the time and place for the planning meeting and contact all the team members. This can be handled within the school through whatever scheduling and communication procedures are in place. Figure 9 shows a sample letter that can be sent to those outside the school, perhaps after an explanatory phone call. The agenda for the meeting should be established in advance so that all participants have a clear understanding of what is to take place and can contribute effectively. Productive use of time is also a factor. The agenda should include the following items:

- Introduction of team members
- Orientation to the concept of the ADP, including the objectives of the overall program and of this meeting
- Guidelines or ground rules for group interaction (optional)
- Systematic review and discussion of information on pages one and two of the draft ADP
- Determination of need for additional tests or evaluations
- Determination of need to provide additional support services
- Design of action plan including annual goals, short-term objectives, and evaluation procedures and criteria
- Recommendation of activities to implement the plan and assignment of responsibility for carrying out these activities
- Assignment of monitoring responsibilities

The facilitator should prepare to lead the meeting. The style of the meeting should be informal and relaxed, and everyone should be encouraged to contribute. Consensus should be the decision-making method. A common thread of agreement should emerge from democratic discussion and deliberation, and the facilitator should be sensitive to when consensus has been reached. It may be helpful to designate a recorder to take notes and to complete the ADP as the plan evolves. The agenda should be followed carefully, especially with regard to systematic review and discussion of information on pages 1 and 2 of the ADP to determine needs before starting to formulate the plan.

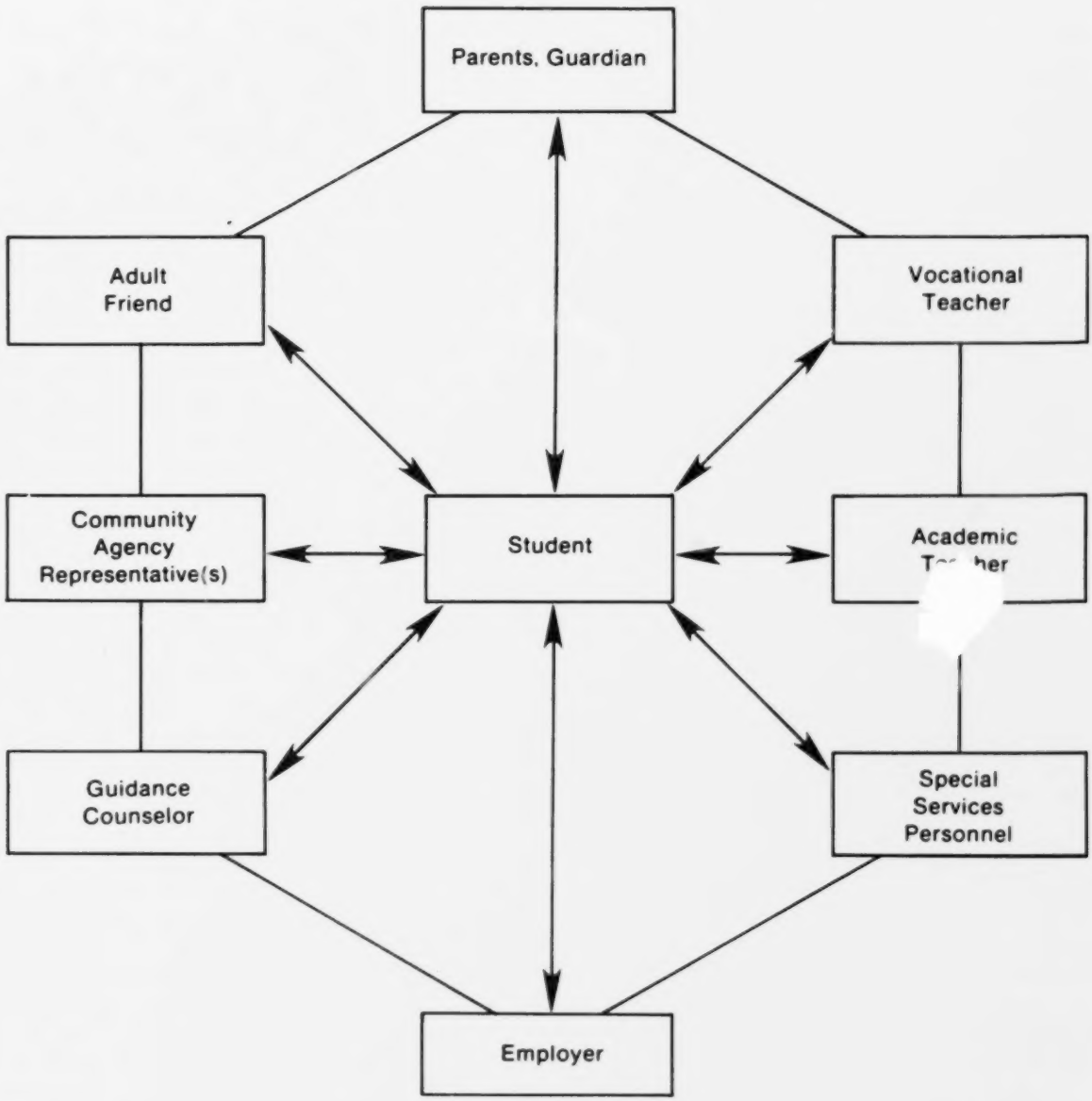

Figure 8. Potential ADP team members

Adapted from McKinney (1985, p. 51).

Copies
Parent
Home School File
Vocational School File

Date: _____

Dear _____

A meeting to develop the academic development plan for this school year for _____ will be conducted as denoted below:

Date: _____
Time _____
Place _____

You are requested and encouraged to attend the meeting. Please inform me if you find that the date or time or place is inconvenient. We will attempt to help with any problems.

ADP Procedures

1. This will be an informal meeting.
2. Participants will include _____

_____

3. Information discussed will be confidential.

Thank you for your assistance in this matter. If you have questions, please feel free to call me at _____ .

Sincerely,

Academic Development Plan Facilitator

- - - -

Formulate the Action Plan

Annual Goals

The beginning point for the Action Plan is the selection of annual goals (see figure 10) that can be established through an analysis of the following:

- Student needs inventory that specifies both needs and interests of the student
- Present level of student performance
- Student's career goal, if specified
- Graduation and course requirements of the school district

The academic goals selected should be discussed at the meeting in relation to the student's vocational work so the student can understand how the goals support his or her overall career goal. For example, if the cross-correlated analysis chart of academic and vocational skills for Brian in the 12th grade shows him to have an overall weakness in the math skills that are considered important for his food service program, one of his goals should be to develop math skills to match the entry-level requirements for a job in food service. Brian should have an understanding of what he needs to accomplish academically in his last year of high school if he expects to be hired for a particular job when he graduates.

For many students, the priority annual goals can be stated in terms of the goals of the courses they need to take to meet graduation and program requirements. The focus of the discussion should be on what those courses will help the student achieve rather than simply on successful completion of the courses. This helps the student to understand how the course is relevant to his/her own needs. This deeper understanding should be a motivating factor.

Short-Term Objectives

It is recommended that short-term behavioral objectives be written for each annual goal using the criterion-referenced procedures for measuring successful performance. Behavioral objectives include the specific behavior that is expected as well as any conditions that differ from what would be the norm for that course. The teachers responsible for teaching the content of these objectives should be involved in writing them. The objectives should be written at about the same level of specificity as the analysis of data that suggested the need for them. They should be targeted enough to address the need but broad enough to work with easily without requiring detailed and cumbersome course adjustments. The objectives should be written in the space to the right of the annual goals (see figure 10).

To follow through with the example, one of Brian's math weaknesses may be in handling and converting fractions as he uses recipes. Rather than have this problem continue to plague him, the math and food services teachers might develop a short-term objective that Brian will be able to halve and to quarter a series of ten selected volume recipes. Thus they are isolating and addressing the problem individually.

Evaluation Procedures and Criteria

Evaluation procedures and criteria should be written next to the short-term objectives (see figure 10).

The criteria for evaluation follow naturally from the short-term objectives and should correspond with the standards required for the job. In the example, the teachers might want to require that Brian work at this objective until he is able to convert the recipes with 100% accuracy.

The evaluation procedures need not be specified in great detail or in formal language. They are simply intended to clarify how one will know when the short-term objectives have been reached. In Brian's case, when ten recipes have been converted in two ways with complete accuracy, the objective will have been met. One might consider a six or ten-week follow-up on Brian's skill with fractions to ensure that he retains the knowledge and does not require

ACTION PLAN			Team members responsible for monitoring:
Annual Goals	Short-Term Objectives	Evaluation Procedures & Criteria	

Figure 10. Action plan

additional assistance. Follow-up might also be provided by calling on Brian in class to give him practice with fractions.

Team Members Responsible for Monitoring

To avoid any confusion as to who will evaluate the performance for a given objective, a person should be designated for each one. It might be one of the teachers involved in teaching the content. Space is provided to note the name beside the evaluation procedures (see figure 10).

Activities Recommended with Responsibilities Identified

If specific activities can be identified that will help the student meet the objectives, they should be noted in the space provided (see figure 11). The team members should not feel it is their role to work out all the specifics of such activities. Rather, the form provides a place to capture ways to help that arise through discussion. For example, a peer tutor might work with Brian on fractions to help him understand the math procedures involved. The math teacher might provide some workbook materials at the right level for Brian and the food services teacher might provide recipes to use for practice. Brian would need to commit the time and effort necessary to work with the peer tutor and practice the skills. If these activities are recorded on an ADP, they are more likely to happen, because everyone will have a common understanding of what is to transpire. Or, if one of the team members knows of available computer software designed to provide assistance in using fractions, this might be used. Or someone might be asked to review the list of software owned by the school to see if something suitable is available.

Further information about activities and strategies that may be helpful can be found in the following **BASICS'** Targeted Teaching Techniques:

- *Technique for Remediation: Peer Tutoring*
- *Technique for Computer Use: Software Evaluation*
- *Technique for Management: Time for Learning*

The *Primer of Exemplary Strategies* gives ideas that other teachers have used successfully, and *Supplementary Instructional Resources* lists materials by skill area.

Activities Recommended	Student Responsibilities	School Responsibilities

Figure 11. Activities

Closing the Meeting

Space is provided at the bottom of appendix A—page 3 to identify the team members who have cooperated to develop the action plan (see figure 12). The team facilitator should give a brief summary of the decisions made and any assignments or responsibilities identified. The student should be made aware that he or she is the person ultimately responsible for following the action plan and working toward the academic goals and objectives selected. The student should leave the meeting with new, or renewed, resolve to make academic progress, bolstered by the knowledge that the team cared enough to give time and effort to formulating the plan and that they are supporting him or her as an individual. That, in itself, is worth a great deal.

Name	Title	Name	Title
_____		_____	
_____		_____	
_____		_____	

Figure 12. Team members

ADP Task 4: Put the Plan into Action

Just as the development of the plan entails cooperation, its implementation depends on continued cooperation. The recommendation is to give the responsibility for putting the plan into action to the student. The student should have a copy of the ADP (at least pages 1 and 3) for reference and to check off accomplishments. However, the student's initiative, receptiveness, and effort need to be combined with the guidance, instruction, and general support of others on the team, plus some who are not on the team. Even a plan calling for a great deal of independent work, such as might be devised for a talented student, will involve a teacher to suggest directions for exploration.

The pattern of responsibilities has already been worked out in the plan. Now each person needs to follow through on those responsibilities. The facilitator can play an informal coordination role in the early stages to be sure the activities are under way. The designated monitor for various objectives will need to check as well. If special support services have been selected, the facilitator should see that they are initiated.

Ideally, the cooperative effort should extend beyond all persons' carrying out their separate responsibilities. One of the benefits of the planning process that should be capitalized on is the sense of team play that is engendered. The student has a new understanding of how different pieces of an academic program fit together to form a purposeful and synergistic whole. The team members also share in this understanding which should enable them to communicate with each other, as well as with the student, on a different level. This enhanced communication should include the parents and other out-of-school team members as well as school staff. Indeed, one might expect greater involvement and encouragement from these out-of-school members. Overall, there should be a heightened awareness of the importance of the individual's academic achievement and of cooperative support as an element in that achievement.

It is recognized that the exact procedure for putting the plan into action will vary according to the school or district circumstances and policies. School implementation and program issues are complex and of a magnitude beyond the scope of this document. Therefore, while a general overview of an idealized situation is given here, detail is lacking and needs to be supplied for each specific setting by those well aware of the current practices and constraints in that setting.

ADP Task 5: Monitor Student Progress

Systematic monitoring of a student's progress is necessary to ensure that implementation of the plan is kept on track. Team monitors have been noted on the ADP form for each of the goals and objectives of the plan. They are responsible for evaluating student progress, but it is to be hoped that the student will assume some responsibility in triggering the evaluation.

Page 4 of the ADP form has space for reporting monitoring activites with the date and the outcome, as shown in figure 13.

During the monitoring process, each team member should report the results by simply entering the information on the form kept on file. This procedure maintains the information in one central location. As data accumulates, a more accurate picture of the student's academic situation emerges.

Another purpose of the monitoring is to ensure future opportunities to continue to identify strengths and weaknesses in learning and in instruction. Early identification of problems allows for timely correction. Receiving feedback on progress tends to increase student motivation and achievement.

Any support services put in place for the student should also be issuing progress reports through their own processes. For example, if the student is receiving tutoring through an organized peer tutoring program, regular reports should be made by the tutor.

The facilitator should review the progress reports periodically. The degree to which facilitators can regularly address themselves to review and follow-up activities will vary with the staffing of each particular school. In schools that issue interim reports partway through a grading period, it may be possible to fold an ADP review into that process. In most schools it is probably practical to review ADP progress at the beginning or end of each grading period when it would occur most naturally. This timing also allows for analysis of the student's grades in the context of the overall plan.

To the extent that it is possible, further action should be taken on the basis of the reports. If progress is being made overall but a problem in some academic area is not being ameliorated through the suggested activities, some adjustments may be in order. The facilitator can discuss this situation with the team member most closely associated with the problem area, and they may be able to modify the plan constructively.

If little or no progress is evident in the student's academic achievement, steps should be taken to find out why. The facilitator will want to talk to those involved with the student and/or discuss the situation directly with the student. The facilitator may even feel, in some instances, that the team should be reconvened to deal with the problem. The atmosphere of such a session should not be judgmental or punitive, but rather concerned and constructive. Sometimes simply focusing attention on a problem and letting the student know that others have noticed and are concerned can make a difference.

Good academic progress does not lessen the importance of feedback. The opportunity to provide positive reinforcement to the student

MONITORING ACTIVITIES		
Activity	Date	Outcome

Figure 13. Monitoring activities

should be seized. Reinforcement should be forthcoming for progress rather than only for high grades. The form of reinforcement might vary from the facilitator's seeking out the student in the hall or sending an informal note to say "well done," to the principal's writing a brief message on a report card.

In summary, the purposes of the monitoring process are to maintain contact with the student, to see that the plan is being implemented effectively, and to make any adjustments or responses necessary.

ADP Task 6: Revise the ADP

The Academic Development Plan should be reviewed and revised at least annually. If feasible and desirable, the timing can be worked out to be compatible with the school's scheduling of courses for the following year so as to minimize demands on staff time. The procedure is much the same as that for originating the ADP, except that the information on the form can be reviewed and updated rather than initiated.

The facilitator should plan a meeting of the team members. The same team should be reconvened for the sake of continuity unless there is a reason to do otherwise. For example, a team member might be changed if the student had changed programs during the year or if interaction had been hindered by personality differences.

Before the meeting, the student should review the first page of the ADP form and update any items for which the responses have changed. The facilitator should do the same for page 2 of the form. Any tests or evaluations that have been completed over the past year should be entered on the form. If revisions are made, that fact should be noted in the ADP Update section on page 4 of the form as shown in figure 14. If the revisions are extensive, a new page can be attached and indicated in the ADP Update section.

The rest of the ADP Update section should be filled out, essentially as page 3 was, during the review and revision meeting. The team members should review the entire form. Consideration should be given again to whether the information available is sufficient to form the basis for modifications to the plan for the following year.

Discussion with the student can center around which objectives were attained successfully, which were not, and why. Reasons for success are just as important as excuses for lack of progress. The team can focus on the positive factors and build on them for the future.

ADP UPDATE

Review conference conducted? ☐ yes ☐ no	Date:	Attended by:
Page 1 Revisions ☐ yes ☐ no	Page 2 Revisions ☐ yes ☐ no	

Modifications to annual goals:

Modifications to short-term goals:

Revised Activities	Student Responsibilities	School Responsibilities

Figure 14. ADP Update

If additional space is needed in any category on a page of the form, a new page of the form can be substituted. If pages are added, it is wise to date each new page of the form at the upper right to indicate the latest information.

At the end of the review and revision meeting, the facilitator should ask team members for their evaluative comments about the ADP program and procedures. These comments can be compiled for program improvement purposes.

Conclusion

The Academic Development Plan provides an effective vehicle for individualizing the student's academic program. The ADP process provides for centralizing information on the variety of factors that influence a student's academic progress. The individuals involved with the student's academic life form a support team to consider the information, using it to plan how best to help the student. Completion of the ADP form then concretizes the plan and provides a vehicle for sharing information, monitoring, and updating.

How well the ADP process can be implemented in a given time will vary according to the school situation, with special regard to staffing and development of a commitment to joint effort. Educators are urged to consider the ideas presented for individualizing the academic program regardless of how fully their school can implement an ADP program. The salient purpose of this Targeted Teaching Technique is to focus attention on the significance and effectiveness of working as a team with students as individuals. The second purpose is to demonstrate a systematic procedure for converting this abstract idea into a concrete program.

Appendix A

Academic Development Plan Form

ACADEMIC DEVELOPMENT PLAN*

Student's Name: _____ Program: _____

Grade: _____ Coordinating Teacher(s): _____

Birth Date: _____ Counselor: _____

Present Date: _____ School: _____

Parent/Guardian: _____ Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

SCHOOL SUBJECT INFORMATION

Favorite school subject(s):	School subject(s) most disliked:
School subject(s) in which you did best:	School subject(s) in which you did least well:

WORK HISTORY—List most recent employment first—use additional sheets if needed

Employer Name and Address	Employed From:	To:	Job Held (cite special skills required):

Which of your past jobs did you like most? Why?	Which of your past jobs did you like least? Why?	What job skills do you have?

What academic or vocational courses would you like to take?	What are your job goals after high school?

*This four-page plan was designed and developed by the authors as an adaptation of the IEP form found in McKinney and Vreeburg (1985); copyright is claimed by The National Center for Research in Vocational Education. Permission to duplicate for educational purposes is hereby granted.

ASSESSMENT OF NEEDS—ADD TRANSCRIPT AND SKILLS CROSS-CORRELATION

Tests administered: (list)
- ☐None
- ☐Interest
- ☐Achievement
- ☐Aptitude
- ☐Learning Style
- ☐Basic Skills
- ☐Other (specify)

Tests recommended: (list)
- ☐None
- ☐Interest
- ☐Achievement
- ☐Aptitude
- ☐Learning Style
- ☐Basic Skills
- ☐Other (specify)

Evaluations completed		
Medical	☐Yes	☐None
Psychological	☐Yes	☐None
Speech	☐Yes	☐None
Hearing	☐Yes	☐None
Visual Testing	☐Yes	☐None
Orthopedic	☐Yes	☐None
Other	☐Yes	☐None
Evaluation Data Adequate	☐Yes	☐No
Specify Needed Data:		

Summary of test results and their implications:

Summary of course performance information:

SPECIAL CONSIDERATIONS

- Personal problems
- Health problems
- Physical handicap
- Limited English proficiency
- Other (specify)

Program & Services	Check if currently provided	Check if needed	Comments
Basic Skills Class			
Tutoring:			
Vocational School			
Home School			
Transportation			
Home Instruction			
Speech & Hearing			
LEP Class			
Other			
Other			

ACTION PLAN			Team members responsible for monitoring:
Annual Goals	Short-Term Objectives	Evaluation Procedures & Criteria	

Activities Recommended	Student Responsibilities	School Responsibilities

Team Members

Name	Title	Name	Title

MONITORING ACTIVITIES

Activity	Date	Outcome

ADP UPDATE

Review conference conducted ☐yes ☐no Date:		Attended by:
Page 1 Revisions ☐yes ☐no	Page 2 Revisions ☐yes ☐no	

Modifications to annual goals:	Modifications to short-term goals:

Revised Activities	Student Responsibilities	School Responsibilities

Appendix B

Diagnostic Testing

- Formal Student Assessment
- Informal Student Assessment
- Additional Sources of Information

Formal Student Assessment: Diagnostic Testing*

Formal assessment of a student's basic academic skills involves the use of tests which provide a *profile* of the student's strengths and weaknesses in specific basic skill areas. These tests have separate sets of items for each of a fairly large number of objectives. A separate score for each objective or basic skill is usually reported. Therefore, these tests can be used to tell precisely what a student can and cannot do. Diagnostic tests differ from survey tests which give scores for only a few broad areas of achievement, such as reading comprehension or problem solving.

Most standardized achievement tests were developed for general survey purposes only, and are not very useful for planning specific lesson activities. A diagnostic test, however, usually consists of a very large group of very short subtests. Its usefulness for instruction depends on the specificity with which the basic skills are defined. When the basic skills are identified clearly, specific lessons to teach them can be planned. In this way diagnostic tests support instructional planning.

Criterion-referenced tests (CRTs) and some norm-referenced tests (NRTs) are designed to be used for diagnosis. One difference between these two types of tests is the type of score they emphasize. Percent correct or pass-fail are the primary types of scores for CRTs. Comparative scores such as percentile norms, grade-level equivalents, quartiles, and stanines are normally not used for CRTs. They are more commonly reported for norm-referenced tests. The distinction is like the difference between a runner's time for a race and the runner's place of finish. The runner's time is an absolute, or criterion-referenced, measure of achievement. The runner's place is a comparative, or norm-referenced, measure of achievement. Criterion-referenced tests give a more direct index of what a pupil can do. In this sense, criterion-referenced tests are generally more useful in competency-based programs.

*The information in this and the next section of this appendix is reprinted with permission from Dunn, Gray, and Martini (1982, pp. 1-3, 14-21). It represents their opinions.

Criteria for Selecting Diagnostic Tests

Most commercial tests of basic skills, especially the more widely known and publicized standardized achievement tests, are *not* useful for planning individualized instruction. Simply knowing a student's "grade level" of achievement is not particularly helpful in planning instruction. You still don't know what specific basic skills the student has, or does not have.

Selecting the proper test to diagnose a students' basic skill deficiencies is not easy. Some tests are explicitly advertised as diagnostic; most, however, are not. In order to help you select useful diagnostic tests, the following set of criteria for screening tests has been established.

1. **Ready availability.** For maximum usefulness, tests need to be available on call. This criterion excludes "secure" tests, that is, tests that are not readily available to teachers. It also excludes "fugitive" tests such as those that are printed only in research journals.

2. **Appropriateness of grade-level coverage.** Only tests covering levels of skill that are remedial for high school students are useful.

3. **Adequacy of the development process.** Only tests which have been field tested and shown to be reliable should be considered.

4. **Planning usefulness.** In order for tests to support educational planning they must be truly diagnostic. To be diagnostic, tests must give scores for a variety of explicit, and teachable, objectives.

5. **Availability as a "package."** Tests are sold in a variety of forms ranging all the way from brief survey tests to collections of many individual test forms. The most useful are tests which can measure a large number of objectives in a small amount of time.

6. **Suitability for testing groups of students.** The most practical tests are those which can be used with many students at once. At least two of the otherwise suitable diagnostic tests on the market require one-to-one testing. Such tests require an inordinate amount of your time in return for scores on small numbers of students.

Recommended Diagnostic Tests

These screening criteria were applied to a large body of tests. Several types of diagnostic tests met the screening criteria and warrant recommendation. Each type is described below, and those tests which met the screening criteria are named.

Norm-referenced tests. Norm-referenced tests are typically designed to give scores on a few broad skills, such as reading comprehension, in terms that tell where a student ranks relative to other students rather than individual competence.

The main difference between criterion-referenced and norm-referenced tests is not in the tests themselves, but in their scores and interpretation. Absolute or competency-based scores are generally more useful in vocational education, but normative scores can be diagnostic if they are for specific teachable skills.

Three types of norm-referenced tests of basic skills were reviewed: (1) the most widely used ones (e.g., Sequential Tests of Education Progress Battery); (2) tests recommended for our review by other professionals (e.g., Test of Adult Basic Education); and (3) tests whose titles suggested that they are useful (e.g., Diagnostic Tests in Mathematics). The following tests are recommended since they met the screening criteria:

From CTB McGraw-Hill
- California Achievement Test
- Comprehensive Test of Basic Skills
- Test of Adult Basic Education

From Educational Testing Service
- ETS Basic Skills Assessment

From Psychological Corporation
- Metropolitan Achievement Tests: Survey Battery
- Stanford Achievement Tests
- Test of Academic Skills

From Science Research Associates
- SRA Achievement Test Series.

The list of acceptable norm-referenced tests is short because few of the publishers make truly diagnostic scores available. Only a small number of publishers bridge the gap between broad comparative scores and instructionally useful scores. They have done this by dividing the total set of test items into a fairly large number of clusters, then providing separate scores for each of these clusters. These subscores relate more directly to instructional planning than do total test scores, because they more closely correspond with lessons or instructional activities.

Custom-made tests. A number of commercial publishers will custom make tests in response to special orders from test users. The publisher provides a list of objectives for which it has test items in stock, and the user chooses from this list the objectives for its made-to-order test.

The unique advantage of this type of resource is its ability to match almost any curriculum with a test. In contrast, ready-made tests are designed to fit many curricula in a general way, but no single curriculum very well.

There are two disadvantages to these services. First, the lead-time for acquiring custom-made tests is fairly long: eight to ten weeks, or more, from receipt of the order. Second, the cost is much higher than that for ready-made tests, due mainly to the requirement for a sizable minimum order.

Of the six commercial customizing services that were found, three belong to publishers whose parallel ready-made tests are well field tested. These three are: Mastery Custom Tests, by Science Research Associates; ORBIT, by CTB McGraw-Hill; and SCORE Criterion-Referenced Tests, by Houghton-Mifflin.

Objectives-based item banks. An item bank is a large collection of test items that can be selectively combined into tests as the user wants. Since the items are grouped according to the objectives they measure, the banks are called objectives-based. Three of these banks are for sale to districts and schools, thus they are a resource for you to use in making your own tests. Those three banks, which meet the screening criteria, are: Item Banks Package, by Northwest Evaluation Association; IER Criterion-Referenced Objective and Item Bank, by Institute for Educational Research; and Resource Items for Minimal Competency Testing, by Education Commission of the States.

These banks cover a wide range of objectives and grades in reading and mathematics. The first two, which were developed by consortia of school districts, have been Rasch scaled. Thus, tests made from these items give scores which measure instructional objectives and level of functioning.

Criterion-referenced tests. The term criterion-referenced refers to tests whose items measure specific objectives, which provide absolute scores for each objective. Items are selected for these tests mainly on the basis of their consistency with the test's objectives. The objectives are selected on the basis of expert judgment and an analysis of instructional materials. Around 60 such tests of basic skills are on the market now. Most of them, however, have no evidence of reliability. The following subset of criterion-referenced tests meet the screening criteria:

From Cornell Institute for Occupational Education
- Cornell Survey of Basic Skills: Mathematics
- Cornell Survey of Basic Skills: Language Arts

From CTB McGraw-Hill
- Assessment of Skills in Computation
- Diagnostic Mathematics Inventory
- Everyday Skills Test in Reading and Mathematics
- Performance Assessment in Reading
- Prescriptive Reading Inventory
- Tests of Everyday Writing Skills

From Education Commission of the States
- NAEP Released Exercises in Reading and Mathematics

From Educational and Industrial Testing Service
- Tests of Achievement in Basic Skills (Mathematics)

From NCS Education Systems
- Wisconsin Design for Reading Skill Development: Study Skills

From Psychological Corporation

Metropolitan Achievement Tests: Instructional Tests

Stanford Diagnostic Mathematics Test

Stanford Diagnostic Test.

Informal Student Assessment

A variety of informal indicators may point out students' needs for instruction in basic skills. These consist mainly of student's behavior, permanent records, and information tests.

The advantage of behavioral indicators is that they are readily available and appeal to common sense. These include such clues as avoiding reading, doing reading assignments very slowly, consistently mispronouncing words (not to be confused with having a dialect), trying to get other students to do computations, making errors in following written or oral directions, and seeming to have trouble remembering. The latter is often a problem of understanding the original information. The disadvantage of these indicators is that they may show the need for instruction without pinpointing the specific deficits themselves.

Students' permanent records may be used for needs assessment. The accumulation of teachers' comments, grades, and test scores will give you an indication of both students' ability and achievement in the basic skills. They may also give you an indication of whether reinforcement is likely to require help from resource persons.

Scores from non-diagnostic standardized tests will be in most students' files. Such scores cause problems because standardized tests do not fit any specific curriculum very closely. As a method of last resort, however, you can compare a student's scores on standardized tests with scores of local criterion groups. Rather than pinpointing specific strengths and needs, this method will serve to confirm your judgment about an individual's overall need for instruction in basic skills.

Information tests can be made readily by most teachers. They have the advantage of being clearly related to your own classwork. However, their limited generalizability should also be recognized.

Source Information

Cornell Institute for Occupational Education
Stone Hall
Cornell University
Ithaca, New York 14853

CBT-McGraw Hill
Del Monte Research Park
Monterey, California 93940

Educational Commission of the States
300 Lincoln Tower
1860 Lincoln Street
Denver, Colorado 80295

Educational and Industrial Testing Service
Box 7243
San Diego, California 92107

Educational Testing Service
Princeton, New Jersey 08451

Houghton Mifflin Company
One Beacon Street
Boston, Massachusetts 02107

National Assessment of Education Progress
300 Lincoln Tower
1860 Lincoln Street
Denver, Colorado 80295

NCS Interpretive Scoring Systems
4401 West 76th Street
Minneapolis, Minnesota 55435

Psychological Corporation
757 Third Avenue
New York, New York 10017

Science Research Associates, Inc.
155 N. Wacker Drive
Chicago, Illinois 60606

Additional Sources of Information*

Two additional sources of information are:

National Career Development Association
American Association for Counseling and Development
5999 Stevenson Avenue
Alexandria, VA 22304

U.S. Military Entrance Processing Command
2500 Green Bay Road
North Chicago, IL 60064

The second of these is the source for information about the Armed Services Vocational Aptitude Battery (ASVAB), which is provided free of cost to schools. The ASVAB is a multiple aptitude battery designed for use with students in Grades 11 and 12 and in postsecondary schools. The test was developed to yield results that are useful to both schools and the military. Schools use ASVAB test results to provide educational and career counseling for students. The military services use the results to identify students who potentially qualify for entry into the military and for assignment to military occupational training programs.

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*See also BASICS' *Integration of Academic and Vocational-Technical Education: An Administrator's Guide*, pp. 54, 61-66, 77-81, 87-88.

Like other multiple factor aptitude batteries, the ASVAB measures developed abilities and predicts what a person could accomplish with training or further education. This test is also designed to measure potential for occupations that require formal courses of instruction or on-the-job training. In addition, it provides measures of general learning ability that are useful for predicting performance in academic areas. The subtests on the ASVAB are as follows:

1. General Science
2. Arithmetic Reasoning
3. Word Knowledge
4. Paragraph Comprehension
5. Numerical Operations
6. Coding Speed
7. Auto and Shop Information
8. Mathematics Knowledge
9. Mechanical Comprehension
10. Electronics Information

Diagnostic tests for students with special needs should be subject to special selection criteria. For example, real knowledge of the basic skills levels of a student of limited English proficiency is probably obtained only through testing in the native language. Otherwise, the test becomes one of language assimilation. Tests available for LEP students include:

- Connecticut Vocational-Technical School Basic Skills Inventory (Mathematics and Reading Language Arts) published by Houghton Mifflin, One Beacon Street, Boston, MA
- Bilingual Vocational Oral Proficiency Test (BVOPT) published by Melton Peninsula Press, 161 Pittsburg, Dallas, TX 75207
- Basic English skills test published by the Center for Applied Linguistics, 1118 22nd Street NW, Washington, DC 20037
- Apticom published by the Vocational Research Institute of J.E.V.S., 1700 Sansom Street, Philadelphia, PA 19103

Appendix C

Basic Skills Analysis Forms

Basic Skills Analysis Forms

Vocational Area _____ Completed by _____

Program/Course _____ Date _____

Job Title _____

Job Duties	READING							
	Informational			Critical				
	Facts	Instruc-tions	Ideas	Infer Meaning	Generalize	Detect Fallacy and Persua-sive Intent		

Vocational Area

Program Course

Job Title

Completed by

Date

Job Duties	WRITING											
	Structure of Written Messages			Mechanics				Word Selection				
	Key Words and Brief Notes	Outlines Phrases Sentences and Paragraphs	Letter and Other Formal Messages	Capitalize	Punctuate	Write Legibly	Spell	Alphabetize	Grammar	Diction		

Vocational Area _____ Completed by _____

Program Course _____ Date _____

Job Title _____

	ORAL COMMUNICATIONS							
	Listening Comprehension			Language Usage				
Job Duties	To Comprehend Literal Meaning of Message	To Infer Meaning or to Generalize	To Detect Inconsistency Fallacy or Persuasive Intent	Selecting Words	Speaking Face to Face	Speaking Over the Telephone		

Vocational Area: _____ Completed by _____

Program/Course: _____ Date _____

Job Title: _____

	MATHEMATICS							
	Arithmetic Computation			General Mathematics				
Job Duties	Whole Numbers	Fractions	Decimals	Measurements	Numerical Relations and Equivalents	Simple Linear Equations		

Vocational Area _____ Completed by _____

Program/Course _____ Date _____

Job Title _____

	SCIENCE							
	Scientific Method							
Job Duties	State Hypotheses	Use Equipment	Measure	Gather Data	Draw Conclusions	Relate Principles to Vocation		

Appendix D

Cognitive Style, Learning Style, and Teaching Techniques

Cognitive Style, Learning Style, and Teaching Techniques

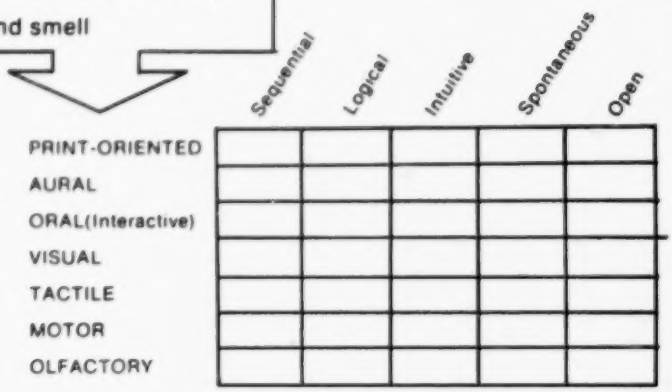
Many dimensions of cognitive style have been identified through experimental research. Some of these dimensions seem to control the way individuals receive information, form concepts, retain information, and process information. According to Kirby (1979),

> one of the simplest survey procedures is that developed by Russell French (1975). Its intended users are primarily instructors interested in diagnosing students' learning styles (although it could probably be adapted for older learners to use for themselves). The instructor looks over a brief description of selected learner behaviors on two lists, then checks off the appropriate category on a behavior matrix, indicating that this behavior has been observed in this learner. The instructor then reviews a set of suggested learning prescriptions to use with the corresponding learning style (p. 68).

The two lists and the corresponding matrix are shown in figure 15. Using the matrix information about the learner's style, the instructor can identify the techniques (shown in figure 16) that French recommends to meet the learner's needs.

Other ways of assessing learning style are described in a 1982 publication of the National Association of Secondary School Principals, *Student Learning Styles and Brain Behavior: Programs, Instrumentation, Research* (ED 227 565).

1. Sensory Intake (Perception)	Characteristic
Print-oriented	Dependence on reading and writing
Aural	A listener; doesn't say much
Oral (interactive)	A talker; learns through discussion
Visual	Must have many visual stimuli and visual representations
Tactile	Has to touch everything and everyone
Motor	Has to move about while learning anything
Olfactory	Learns through taste and smell



2. Concept Formation	
Sequential	Must perceive orderly relationships (B follows A)
Logical	Uses processes of reasoning to reach conclusions
Intuitive	Perceives truths and facts directly without benefit of extensive reasoning
Spontaneous	Relies on impulse
Open	Uses combinations of the above or different ones of the above at different times

Figure 15. French's (1975) learner behaviors lists and corresponding behavior matrix.

Reprinted from a National Center for Research in Vocational Education publication by Kirby (1979, p. 69).

STYLE	MOST APPROPRIATE TECHNIQUE
Print-Oriented	Reading, writing about, book-based discussion
Aural	Lecture, listen to panel discussion, sound film, television, audiotape
Oral (Interactive)	Socratic discussion, panel discussion colloquy, dramatization, dialogue, interview, debate, T-group, role play, student verbal presentation, games, student demonstration
Visual	Slides, motion picture, filmstrips, television, still pictures, observer of dramatization, non-verbal exercises, demonstration, trips, exhibits
Motor	Role play, games, action mazes, non-verbal exercises, student demonstration, learning centers
Olfactory	Trips, exhibits, addition of taste and smell experiences to daily activity

Figure 16. French's (1975) learner style/teaching technique matches

Reprinted from a National Center for Research in Vocational Education publication by Kirby (1979, p. 70).

Appendix E

Summary of Sex Equity Principles

Summary of Sex Equity Principles

Women on Words and Images has published a list of awareness questions to be used as a checklist for evaluating materials. This list is reprinted in BASICS' *Instructional Materials Development*. The ideas are applicable for raising awareness about interactive behavior, so they are summarized briefly here.

Language

During the ADP process many opportunities will be presented to observe sex equity in language when talking to both male and female students. Some principles to remember include:

- Avoid unnecessary focus on terminology that refers to a persons's sex (e.g., the woman doctor, Dr. Jones and his secretary, the fair sex).
- Avoid sex-stereotypical references when actual gender is unknown (e.g., the carpenter—he, chairman).
- Avoid presenting females in subordinate, dependent, unequal, or marital status terms.

Roles

The way in which occupational and social roles are discussed should be sex-fair. Roles should be presented as follows:

- Present all occupations as appropriate to qualified persons of either sex.
- Avoid associating any job automatically with one sex (e.g., secretary—female, plumber—male).
- Avoid linking females or males occupationally with other roles they may assume (e.g., housekeeping, parenting, assisting, lawnmowing).
- Avoid portraying either males or females as having sex-linked personality traits that influence their working abilities (e.g., brusque foreman, emotional secretary), and instead present a range of emotional traits for both females and males.

Omissions

Sex stereotyping is sometimes perpetuated by what people do, *not* say. Opportunities can be taken to:

- Discuss the increasing movement of both men and women into nontraditional occupations.

- Acknowledge achievements of women, past and present.
- Acknowledge limitations placed on women in the past (e.g., women couldn't attach their names to inventions).

Physical Appearance

Sex-fair descriptions should be recognized as promoting sex equity, as follows:

- Avoid describing females only in terms of their physical appearance and males only in terms of accomplishment or character.
- Avoid presenting women as concerned and men as unconcerned about clothing, hairstyle, and grooming.
- Try to counter sex-stereotyped ideas as portrayed on posters, in occupational pamphlets, or in other materials.

Appendix F

Extending Horizons: School and Community Persons

by

Lorella A. McKinney
Catherine West

Extending Horizons: School and Community Persons provides basic information for general educators and other community persons to increase their awareness and understanding of how to meet the needs of handicapped youth in the school-to-work transition. General descriptions of capabilities and dysfunctions associated with selected handicapping conditions as well as descriptions of effective instructional strategies are provided for those working with handicapped persons. Materials adaptations as well as environmental modifications are briefly described also.

MAINSTREAMING AND VOCATIONAL EDUCATION— A WORKABLE COMBINATION

The law requires and conscience dictates that handicapped persons ages 3 through 21 be provided a free, public education designed to meet their unique needs and to lead to gainful employment. Because the handicapped population in general experiences inordinately high levels of unemployment and underemployment, it is essential that handicapped students have access to appropriate vocational education to prepare them for successful competition in the labor market and that they have access to support mechanisms to assist them in successfully making the transition from school to work.

Traditionally, handicapped students have been separated from the educational mainstream early in their school careers and tracked into "special" programs. The vocational focus of these programs has generally been limited to unskilled or semiskilled occupations, and the personnel of such special education programs have been specifically trained to deal with the effects of the various handicapping conditions of their students but have not been specifically trained to teach vocational skills.

Today, with the development of federal, state, and local legislation designed to protect the rights of handicapped citizens, and with a generally more enlightened public attitude toward handicapped persons than previously, automatic segregation of handicapped individuals in education and employment is no longer acceptable. As a result, the personnel of regular vocational education programs, at both the secondary and postsecondary levels, find themselves faced with the dilemma of how to accommodate handicapped students in their classrooms and programs without the benefit of special education preparation and knowledge.

Reprinted from McKinney and West (1985, pp. 90-105).

The Handicapped Student Population

Who are these handicapped students? Attempts to count the handicapped population are hampered by differences in definition and in interpretation. The term *handicapped* has no universal meaning. Relevant legislation does, however, provide a framework within which some estimates can be made. Public Law 94-142 (The Education for All Handicapped Children Act) defines "handicapped children" as those ages 3 through 21 who

> are evaluated in accordance with procedures specified in the regulations and who, as a result, are found to be mentally retarded, hard-of-hearing, deaf, speech-impaired, visually handicapped, seriously emotionally handicapped, orthopedically impaired, deaf-blind, other health impaired or specific learning disabled, and are in need of special education or related services. (Excerpted from *Training the Handicapped for Productive Employment* by Robert Weisgerber, Peter Dahl, and Judith Appelby by permission of Aspen Systems Corporation, © 1980, p. 4.)

Using this definition, for the 1977-78 school year, 3,776,926 children with the above-listed conditions were reported as being served educationally in the United States. The breakdown in table 1 (ibid. p. 4) shows the distribution of this number by handicapping condition. Projected estimates of the numbers of individuals fitting the legal definition of handicapped children range from five to eight million.

TABLE 1

HANDICAPPED STUDENTS IN U.S. SCHOOLS—1977-78

Conditions	1	2	3
Speech Impaired	1,226,957	32.5	2.39
Learning Disabled	969,368	25.7	1.89
Mentally Retarded	944,909	25.0	1.84
Emotionally Disturbed	288,626	7.6	.56
Other Health Impaired	136,164	3.6	.27
Orthopedically Impaired	88,070	2.3	.17
Deaf/Hearing Impaired	87,144	2.3	.17
Visually Handicapped	35,688	0.9	.07
TOTALS	3,777,106 [3,776,926]	100.0 [99.9]	7.36

1 = number of handicapped children receiving services
2 = percent of handicapped school-aged children
3 = percent of all school aged children (N = 51,256,655)

SOURCE: Adapted from *Progress Toward a Free Appropriate Public Education: A Report to Congress on the Implementation of Public Law 94-142, The Education for All Handicapped Children Act,* U.S. Department of Health, Education, and Welfare, Office of Education, January 1979, pp. 159, 162.

Participation rates for handicapped students in vocational education programs do not reflect the actual ratio of handicapped students to the overall student population. Handicapped students in 1976 and 1978 represented only 1.8 percent and 2.1 percent, respectively, of the total vocational enrollments nationwide (ibid., p. 65). Given the high unemployment and underemployment rates among working-age handicapped persons, it is clear that the vocational education needs of this group are not being met.

Mainstreaming Concerns

Legislative and professional efforts to correct this problem have centered in recent years upon the concept of "mainstreaming." The National Advisory Council on Education Professions Development defines mainstreaming as follows:

> . . . mainstreaming is the conscientious effort to place handicapped children into the least restrictive education setting which is appropriate to their needs. The primary objective of this process is to provide children with the most appropriate and effective educational experiences which will enable them to become self-reliant adults. Within this objective, it is thought preferable to educate children the least distance away from the mainstream of society. Hence there is a heavy emphasis on movement into the regular classroom whenever possible. (*Programs to Combat Stereotyping in Career Choice* 1980, p. 158)

Predictable problems have arisen in implementing the mainstreaming concept. Regular education personnel have not traditionally been prepared to deal with the unique needs of handicapped students. They have had to deal with unfamiliar classroom situations and with their own concerns about how best to ensure effective educational experiences for all their students, handicapped and nonhandicapped. These concerns fall into three basic categories:

- **Can regular vocational instructors teach both handicapped and nonhandicapped students?** This concern centers around the fear that vocational personnel who have not had special preparation will not be able to teach handicapped students, reflecting the assumption that handicapped students require radically different and highly individualized instructional techniques. While handicapped students do require individualization of instruction and modification of traditional methods to varying degrees, in many cases these requirements can be met successfully by vocational educators in the regular classroom. Vocational instructors with local administrative leadership can make effective use of resource personnel—special education teachers, teacher aides, guidance counselors, parents, peer tutors, community resource persons, and consultants—for assistance in effectively including handicapped students in vocational education programs.

- **What about the time and effort required to adapt the instructional program to the needs of the handicapped students?** The experiences of educators who have already made the transition to mainstreaming prove that the time and effort required of regular vocational personnel to make necessary adaptations in curriculum, materials, and methods are not prohibitive. Much work has already been done in the areas of adapting vocational curricula and teaching methods to meet the needs of students with a variety of handicapping conditions. The attached bibliography cites a number of excellent resources. Once again, the vocational instructor should draw on the expertise of available resource personnel for assistance in effecting the necessary changes.

- **How can the psychological welfare and physical safety of the handicapped students be ensured?** This concern is legitimate inasmuch as the students' safety and comfort are essential to a successful learning experience. Minor modifications of safety procedures and effective sensitizing of nonhandicapped students have proven, however, to be both effective and easily accomplished.

Mainstreaming can be abused if handicapped students are placed in regular classrooms without the proper support. In such a case, the mainstreaming experience is a negative one for everyone concerned. The student feels that he or she has failed, the nonhandicapped students develop a negative view of handicapped peers, and the instructor and other educational personnel involved in the mainstreaming exercise receive a negative impression of the concept. It is essential, therefore, that mainstreaming be approached realistically, with sufficient prior planning to identify and make provision for the special needs of the student(s) involved.

While the types of concerns cited above can be dealt with effectively through the use of available resources, negative attitudes toward mainstreaming are difficult to change. In order to ensure that such attitudes do not prevent the assimilation of handicapped students into regular vocational education programs, the mainstream concept has been formalized as a matter of public policy. The legislation mandating mainstreaming also provides financial resources for its accomplishment.

Legislative Requirements and Resources

The major piece of federal legislation relating to mainstreaming is The Education for All Handicapped Children Act of 1975 (Public Law 94-142). The law requires that all handicapped children ages 3 through 21 be provided a free, appropriate public education designed to meet each student's unique educational needs. It further requires that the educational placement of the handicapped student be in the *least restrictive environment* appropriate for the individual. In other words, if a disabled student can function in a regular classroom when reasonable accommodations are made, that student should be in a regular classroom. The intent of this language in the legislation is to ensure that handicapped students are not shunted off into "special" classes, which serve only to isolate them and retard their educational and personal development.

The act establishes a payment formula to aid states in providing the services required. This is the largest single federal fiscal commitment to handicapped children.

Federal grants to states for vocational rehabilitation services are authorized by the Vocational Rehabilitation Act of 1973 and its 1974 amendments. Section 504 of the act is the civil rights statute that prohibits discrimination on the basis of handicap and requires that education and human services facilities be accessible to handicapped persons.

The Vocational Education Act of 1963, amended in 1968 and again in 1976, authorizes federal grants to expand and strengthen vocational programs for handicapped students. The 1976 amendments require that 10 percent of federal funds allocated to states for vocational education be spent for handicapped students enrolled.

The funds available through these and other federal, state, and local laws can be used for a variety of activities to facilitate compliance with the laws' requirements. Such activities include curriculum and facilities modification, recruitment and promotional efforts, and educational/supportive services to supplement regular programs. These funds can also be used to compensate regular education personnel for the extra time required to effect necessary changes.

The effectiveness of the mainstreaming effort in vocational education depends to a great extent on vocational educators. They need to understand the nature of the handicapping conditions represented among their students and the vocational implications of these conditions. The following descriptions of various handicapping conditions are provided as a resource for increasing that understanding.

Overview of Handicapping Conditions

Deafness/hearing impairment. The degree to which a student's hearing is impaired will determine the extent of modifications required for accommodation in the regular classroom. A student with only a partial hearing loss can often be accommodated by being assigned a seat near the front of the classroom. Hearing aids usually allow these students to participate without great difficulty in classroom activities.

The deaf student, however, requires additional support. There are several possible ways of communicating with deaf students, and the choice of the appropriate method will depend on the individual student's needs and experience. The instructor should not feel inhibited about seeking professional advice or discussing with the student how best to ensure effective communication. Some deaf students may be able to speechread (read lips), but vocational personnel must keep in mind that no one can be expected to speechread all of every conversation. Many deaf persons communicate using American sign language—a series of hand and arm positions and movements that represent words and concepts—and fingerspelling, in which hand/finger positions and movement represent letters of the alphabet and numbers. The manual alphabet is easily learned, and many hearing persons use it to communicate with deaf friends and relatives.

Note takers and/or interpreters can also prove very helpful not only for the deaf student but also for the instructor. The interpreter uses sign language to translate for the deaf student. The note taker develops notes from classroom lectures and discussions. Usually, a note taker should sit next to the deaf student so that the student can glance at the notes periodically in order to facilitate participation in class. The instructor must remember that whatever method is used, the deaf student will almost always be a few words or sentences behind. Frequent pauses allow the deaf person to catch up. Particularly when student questions or responses are sought, these pauses will serve to minimize the isolation that can result from any sensory impairment.

Depending upon the cause of the hearing impairment, the student's sense of balance may be adversely affected. In these cases, vocational personnel should help the student focus on occupations that do not require the maintenance of balance in precarious positions. If the student will be working with machinery that utilizes signals or warning devices, these will need to be modified to visual signals and warnings to accommodate the hearing-impaired student.

The speech of the deaf/hearing-impaired student may be "different" sounding—flat, nasal, slurred, mispronounced—due to his or her inability to hear himself or herself speak. It is important to remember, and to ensure that nonhandicapped students understand, that such speech problems do not indicate any intellectual deficiency.

Blindness/visual impairment. Students with visual impairments will obviously require certain modifications in the vocational program or environment to allow them to participate safely and effectively. As in the case of the hearing-impaired student, the extent of the impairment will determine the type and extent of modification required. Students with some residual vision may be accommodated through the use of magnifying devices and large-print materials. For blind students, tape recorders, braille materials, and sighted readers can be utilized.

The blind student will need to be oriented to the classroom area and to the school in general. A tactile map of the area may prove useful in this regard. Many blind persons use a cane or a guide dog to assist them in getting around, and an initial orientation to their surroundings will generally suffice. In some cases, it may be desirable to assign a sighted student to serve as a "buddy" to the visually impaired student. This person can also serve as a note taker/reader for the blind student. As mentioned previously, the law provides financial assistance to pay for the services of readers.

Equipment that utilizes visual signals or warning devices must be modified if it is to be used by visually impaired students. These signals often may be altered to auditory or tactile devices. In assisting the student with career decision making, vocational personnel should help the student to make realistic choices based on the requirements of particular occupations. Blind adults are employed in most major fields, but there are certain areas in which modification to accommodate a visual impairment may not be feasible (e.g., driving an automobile or piloting an airplane).

Mental retardation. The mentally retarded student who can be mainstreamed usually falls into the category of "mildly" retarded. There are two major theories about how such students learn. According to the "developmental" theory, the mildly retarded student's learning process is essentially the same as that of a normal student, but it proceeds at a slower rate. The "difference" theory, on the other hand, holds that the learning process of mildly retarded students is essentially different, not just quantitatively but qualitatively as well. There is no definitive study proving or disproving either theory (*The Educable Mentally Retarded Student in the Secondary School* 1975, p. 15).

Learning characteristics of the mildly retarded student *may* include one or more of the following:

- Short attention span
- Slow reaction time
- Tendency to forget quickly
- Limited ability to grasp abstractions
- Limited ability to generalize
- Difficulty in recognizing familiar elements in new situations
- Slowness in forming associations between words and ideas
- Local point of view
- Difficulty in analyzing and solving problems
- Difficulty in thinking critically and making decisions
- Limited ability to evaluate materials for relevancy

These characteristics also *can occur* in other disabilities and with "normal" students.

In order to compensate for these shortcomings and to accommodate the mentally retarded student in regular classes, the vocational instructor should

- be as concrete and precise as possible in giving instruction and guidance to the student,
- concentrate on positive reinforcement,
- provide short learning periods and supervised study sessions, and
- provide flexible time allotments for individual students to complete learning tasks.

It is very important that instructors be aware of the learning characteristics mentioned and with methods for accommodating these students in the regular classroom. Constant repetition and reinforcement are essential.

Learning disabilities. There is no single formula for accommodating the learning disabled student in the regular vocational classroom, due in large part to the fact that there is no "typical" student with whom to work. The term *learning disability* means many things to many people, and finding an acceptable definition has proven to be a major problem even for specialists in the field. Since learning disabilities have now been recognized as a handicapping condition, and government funds have been allocated for the education of learning disabled students, the federal definition provides a framework within which to examine the problem. That definition is as follows:

> Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage. (Donald H. Johnson and Leah J. Johnson 1978, p. 5).

In practice, learning disabilities usually manifest themselves in a severe discrepancy between achievement and intellectual ability in such areas as oral and/or written expression, listening comprehension, basic reading skills and/or reading comprehension, and mathematical calculation and/or reasoning when the student is provided with learning experiences appropriate to the individual age and ability level.

Given the broad nature of this definition, it is nearly impossible to identify characteristics common to learning disabled students in general. Although the most common characteristic of the learning disabled population is underachievement, not all students who fail to achieve according to their ability can be said to be learning disabled. Most learning disabled students are described as having disorders of attention, usually short attention span and poor concentration. About half of all learning disabled students exhibit hyperactive behavior (ibid., p. 7).

In dealing with the reading problems of learning disabled students, one-to-one reading activities have proven to be most successful. Such activities include the parent and student reading together, the teacher and student reading in unison, or an individual tutor working with the student on specific skills. Obviously, the instructor will not always have the time to spend on one-to-one activities with particular students. Using teacher aides or other students to work with the learning

disabled student can overcome this problem. Spelling and writing problems seem to be dealt with effectively when treated simultaneously with reading problems. By approaching the language problems of the learning disabled student from all angles, the instructor can utilize effectively the elements of visual, auditory, and tactile perception to enhance the student's language comprehension.

Dealing with the learning disabled student's arithmetic difficulties in the vocational program is quite troublesome, and research in this area is very sparse. Simple drill is effective but is not a solution in itself. Other suggestions include providing explicit instructions and learning "tricks," having the student orally summarize instructions and concepts, and using practical application of concepts and processes. Students with learning disabilities should be encouraged to use calculators and technical aids whenever possible.

It is clear, then, that students with learning disabilities are more different from one another than they are alike. Suggestions for accommodating them in the regular vocational classroom, such as those provided here, must be very general in nature, and much of what vocational personnel find to be effective with learning disabled students will be the result of individualization on a case-by-case basis. Generally, structure is important for learning disabled students, as is consistency.

Orthopedic impairment. Orthopedically impaired students are those with physical impairments severe enough to limit their educational performance. Such impairments may be congenital in origin or may be the result of accident, disease, such as polio, or other conditions, such as cerebral palsy or amputation. The accommodation problems associated with orthopedically impaired students usually relate to access and mobility. Accommodating these conditions is usually a matter of mechanics and common sense, and may be as simple as making aisles wide enough to allow passage of a wheelchair or lowering a workbench to accommodate a wheelchair-bound student. Such accommodation may not always be possible. Can a wheelchair-bound student operate a drill press or use welding equipment? The instructor must consider such questions as these in determining how accommodations are to be made.

Two of the most commonly encountered causes of orthopedic impairment are cerebral palsy and multiple sclerosis. *Cerebral palsy* is not a disease. It is a group of medical conditions caused by damage to the part of the brain that controls and coordinates muscular function and it is characterized by nerve and muscle dysfunction. There are five basic classifications of cerebral palsy, each with similar but distinct symptoms:

- **Spasticity**—Stiff and difficult movement due to loss of voluntary muscle control (50 percent to 60 percent of persons with cerebral palsy experience spasticity)
- **Athetosis**—Involuntary, uncontrollable movements; slow, jerky, irregular writhing and twisting of limbs (12 to 18 percent of cerebral palsy individuals experience this)
- **Ataxia**—Inability or awkwardness in maintaining balance or coordination (this affects 1 to 10 percent of cerebral palsy persons)
- **Rigidity**—Resistance to almost all movement
- **Tremors**—Rapid repetitive movements of the body

More than half of all persons with cerebral palsy are mentally retarded; fewer than one-third of them have seizures; about one-half have visual impairments; and many have hearing, speaking,

and learning problems. The physical manifestations of the condition can sometimes be corrected or minimized through orthopedic surgery, braces, and/or medication.

Multiple sclerosis. Multiple sclerosis is a neurological disease whose cause is not yet discovered. The myelin sheath is the insulation around nerve fibers in the brain and spinal cord that carry messages to all parts of the body. Multiple sclerosis attacks and destroys myelin, replacing it with hardened tissue. This process is called sclerosis. It occurs at various places in the nervous system (thus the term *multiple* sclerosis), causing minor interruptions of nerve impulses. The symptoms may be mild or severe, they may come and go, and they occur in scattered parts of the body. Symptoms may include partial or complete paralysis, numbness or tingling, blurred vision, slurred speech, loss of coordination, and fatigue.

Vocational personnel should be familiar with the common conditions associated with cerebral palsy and multiple sclerosis, which include slurred speech, loss of coordination, spasticity, and involuntary movement. Individuals with cerebral palsy or multiple sclerosis also often become fatigued more quickly than nonhandicapped individuals. Accommodation of these problems will require understanding and monitoring on the part of vocational personnel and sensitizing of nonhandicapped peers. It is important to remember that cerebral palsy and multiple sclerosis are not communicable diseases and that their associated conditions are not generally indicative of intellectual deficiency.

Other health impairments. By federal definition, students considered to be "other health impaired" are those who experience limited strength, vitality, or alertness because of chronic or acute health problems, such as heart condition, tuberculosis, rheumatic fever, asthma, sickle cell anemia, hemophilia, epilepsy, leukemia, or diabetes (*Vocational Education for Handicapped, Limited English Proficiency, and Disadvantaged Persons* 1981, p. 9). Of these, one of the most commonly encountered—and one which often carries social stigma—is epilepsy.

Epilepsy is not a disease, but rather a condition or disorder of the brain. It is not a form of mental illness. There is no single cause for the disorder. Epilepsy can take many forms. Grand mal seizures (convulsions) are usually accompanied by loss of consciousness of short duration. Such seizures are rare today because of modern drugs used to control convulsions. Petit mal seizures are momentary lapses of attention. Psychomotor seizures are of very short duration and are marked by blinking of the eyelids or random, purposeless movement.

After a seizure, a short rest period usually restores the person with epilepsy to normal functioning. Seizures are generally infrequent, and between seizures most people with epilepsy are normal and healthy. In many cases, the epileptic person feels a warning "aura" prior to the onset of a seizure and can solicit assistance and/or go to a secluded place to rest until the seizure has passed.

Vocational personnel and other students need to know what to do in case of a seizure at school. For petit mal and psychomotor seizures, nothing need to be done other than to explain what is happening to others who witness it. In the unlikely event of a grand mal seizure, remain calm, clear the area around the epileptic student, do not try to restrain the individual's movement, do not force anything between the teeth, do turn the head to one side and place something under it. After the seizure, allow the student to rest. It is best to call in the school nurse. It is not necessary to call a doctor unless the attack is followed by another major seizure or if the seizure lasts more than 10 minutes.

Regular vocational education personnel may teach students with a variety of handicapping conditions in addition to teaching nonhandicapped students in their classrooms and programs. Regular educators must find ways of accommodating the effects of students' handicapping conditions encountered within the classroom without sacrificing the quality and quantity of learning that must occur for all students. A combination of general policies and procedures for modifying the traditional curriculum along with individualization of instruction to the greatest extent possible is the key to achieving this goal.

Adaptations/Adjustments in the Regular Vocational Program

Developing Positive Self-Concepts

In many cases handicapped students, because of the isolation that results from the effects of their disabilities, have difficulty developing positive self-concepts. Efforts to correct this problem can prove beneficial not only for the handicapped students but also for nonhandicapped students and for vocational personnel themselves. The following suggested techniques (Peterson 1979) can be implemented with handicapped students by classroom instructors, guidance counselors, placement specialists, and/or other appropriate staff members to provide experiences to improve self-concepts.

- **Bibliotherapy**—Fictional and nonfictional accounts of handicapped individuals who have learned to cope with their handicap. These could include magazine articles, newspaper clippings, and radio/television broadcasts about successes of individuals.

- **Role models**—Handicapped adults (particularly young adults) in the community who are successful in education, employment, homemaking, and civic activities.

- **Role playing**—Replay of a familiar situation and use of reflection and/or analysis of the experiment to help students learn a new response. This can provide practice for a future situation, such as job interviewing.

- **Group guidance**—Content-oriented group activities that focus on such areas as job seeking, career information, and orientation to the school building.

- **Group counseling**—Counseling undertaken with no content agenda and no planned sequence of topics. Participants share their concerns in an atmosphere in which the counselor serves as facilitator rather than authority figure. Participants develop guidelines for confidentiality and establish commitment to helping one another.

- **Extracurricular activities**—Music, school newspaper, student council, yearbook, athletics, and student vocational organizations such as FFA, FHA, DECA, VICA, and so on.

These activities provide students with an opportunity to develop a sense of their identity as contributing members of the class and to experience success in areas of personal interest. Use of these techniques should reduce the isolation of handicapped students and discourage feelings of "differentness" and inferiority among them.

Fostering Student Success

While specific techniques from a specialist may be required to deal with specific handicapping conditions, some general instructional guidelines will prove effective with all students.

- A step-by-step approach to learning should be used, with one concept or task being mastered before the next is introduced. This reduces confusion and frustration of students and enhances the vocational educator's ability to monitor student progress.

- Written material should be simple and clear, and material should be presented in more than one form. Simultaneous presentation of material in different forms—for example, tapes, transparencies, filmstrips, handouts, and lectures/discussions—can provide reinforcement of the concepts presented and should ensure that students can benefit from the presentation regardless of learning problems.

- Verbal instruction should be simple and specific, with opportunities afforded for students to ask questions or seek clarification.

- Information should be presented in small amounts, with lessons and tasks broken down into logical, sequential steps.

- Instruction should focus on concrete ideas rather than abstract concepts. In explaining abstractions, the vocational educator will find it helpful to relate the concept being presented to the students' own experiences. Use of concrete examples, models, and demonstrations will facilitate learning of the concept. Repetition and rewording will provide additional reinforcement, and practical application of concepts will facilitate understanding.

- Vocational personnel should examine their own attitudes and behavior toward students to ensure that their behaviors are conducive to successful learning experiences.

- Students should be expected to work just beyond their current level of achievement, and all achievements should be praised.

Minimizing Failure

A corollary to fostering success is minimizing failure. In order to reduce the likelihood of student failure, various techniques can be employed.

- Additional time may be required for mastery or completion of material and assignments, as well as adaptations of materials for varying reading levels.

- Students with specific learning problems should not be forced into situations before peers where failure is inevitable, such as spelling or reading aloud or writing on the board.

- Allowing students to work in small groups or with partners and giving them choices among a variety of approaches in performing tasks/assignments should increase the probability of their success.

- Distracting, external stimuli should be reduced to the extent possible.

- In evaluating the abilities of students, vocational educators need to take care to ensure that what is evaluated is the students' knowledge and understanding of the material rather than their ability to read, write, or spell. Reading, writing, and spelling can be influenced adversely by some disabilities. It is important also that the performance of disabled students be measured against their own potential and capabilities rather than against that of

their classmates. In most cases, assuming that the students are sincerely making a genuine effort and that the work is fitted to the students' capabilities, they should be able to succeed.

Adapting Testing Techniques

In some cases modification of testing methods may be required to foster student success. The following are possible types of adaptations that may be needed.

- For sighted and hearing students with reading problems, test instructions and the test itself can be given orally. Oral test administration should be clear, simple, and slowly stated. Test questions can be read aloud before the exam begins, allowing students to jot down brief answers so that a second reading will be less difficult. The instructor may also wish to make use of oral exams, with the answers given directly to the instructor, tape recorded, or dictated to another student.

- If the problem is one of attention span, a series of short quizzes may be more effective than a long exam.

- If the student has a writing problem, multiple choice or true-false formats may be preferable to essay questions.

Individualizing Instruction

In addition to the general guidelines for adaptation just discussed, vocational educators will find that individualization of instruction is most effective in accommodating the unique needs of handicapped students. Public Law 94-142 requires that every handicapped student have an individualized education program (IEP) developed.

This program is developed jointly by appropriate educators, rehabilitation personnel, parents, and the student. It describes the student in terms of capabilities and functioning levels, establishes short-term and long-term educational goals, and identifies the steps necessary for goal achievement and the appropriate persons to be involved in each step. Vocational personnel can use the IEP and expand on it to individualize the handicapped student's vocational program to the extent necessary to promote successful completion of the program.

Individualization of instruction does not require the vocational educator to invent a new program of study for each student. The materials to be covered and the skills to be developed remain constant, but instructional strategies are modified to meet the unique needs of individual students. In order to accomplish such modification successfully, vocational educators need to assess the functional capabilities, interests, and learning styles of the student in question. The IEP is a useful tool in this process, since it contains the results of any such assessments already made during the student's educational career. By using this information and conducting further assessment in specific vocational and related areas, the vocational educator can, in conjunction with the student, establish goals—desired outcomes of the student's participation in the vocational program—toward which instruction should be directed.

Once these goals have been established, the knowledge and skills that the student must acquire in order to achieve the goals can be identified. Individualization is then a matter of choosing instructional techniques that will best facilitate the student's acquisition of such knowledge and skills based on the assessment of the student's current functioning level and capabilities.

A wealth of research material exists in the areas of curriculum modification and individualization. The bibliography lists several excellent resources that should prove useful to vocational educators in successfully performing these tasks. The appendix lists sources for curriculum materials and special aids.

FROM EDUCATION TO EMPLOYMENT— FACILITATING SUCCESSFUL TRANSITION

The purpose of vocational education is to provide students with knowledge and skills that will enable them to become gainfully employed. To accomplish this purpose, vocational students need to be provided with training not only in the technical aspects of their chosen area but also in general entry-level skills in order for them to compete successfully in the labor market. Handicapped students have these same needs as well as special needs imposed by their conditions.

Making the transition from school to work is an adjustment process during which students need to have access to ongoing support of various types. This support should begin before the student completes the vocational program and should continue into the initial period of employment. Vocational educators play an important role in providing this support to handicapped students.

Orientation to the world of work is an important part of any vocational curriculum. Students need to become skilled in writing a resume, identifying potential employers, applying for jobs, interviewing, and anticipating employer expectations. For handicapped students these skills must be taught with an eye to the unique needs of the particular student.

What transportation needs does the student or employee experience in getting to and from interviews or to and from a job? How can he or she deal effectively with employer biases encountered during job interviews? If work site accommodations are required, the student should be prepared to help the employer find reasonable ways of accomplishing such modifications.

These are areas in which vocational educators can be very helpful to handicapped students in preparing for employment. Classroom practice in writing resumes and filling out applications, as well as role playing of interview situations, give students an opportunity to explore various methods and discover where their strengths and weaknesses lie. They can use practice sessions to develop confidence in their ability to carry out job search activities and to become familiar with the mechanics of locating and obtaining the right job.

Vocational educators face the task of accommodating handicapped students in their classrooms and programs. It is not an easy task, but it can be a rewarding one if viewed as a challenging opportunity to improve the vocational education program. Vocational personnel are not alone in accomplishing the task. Parents, counselors, therapists, special education personnel, and handicapped students themselves are excellent resources upon which educators can and should draw for assistance and guidance. The potential rewards—economic, social, personal, and professional—of helping handicapped students become productive members of society far outweigh the cost involved in terms of time, effort, and finances. There are no acceptable alternatives.

SOURCES OF CURRICULUM MATERIALS AND SPECIAL AIDS

1. Assistive Aide and Devices for the Handicapped
   Ohio Resource Center
   470 East Glenmont Avenue
   Columbus, OH 43214

2. Educational Design, Inc.
   47 W. 13th Street
   New York, NY 10011

3. Electronic Aids for the Severely Handicapped
   Prentke Romich Co.
   R.D. 2, Box 191
   Shreve, OH 44676

4. Human Resources Libraries
   EDN Corp.
   Jenkintown, PA 19046

5. Janus Book Publishers
   2501 Industrial Parkway West
   Dept. B
   Hayward, CA 94545

6. Learning Tree Filmstrips
   7108 S. Alton Way
   P.O. Box 3009, Dept 85
   Englewood, CO 80155

7. Mafex Associates, Inc.
   90 Cherry Street
   Box 519
   Johnstown, PA 15907

8. Pre-Vocational Training Center
   EBSCO Curriculum Materials
   Div. EBSCO Industries, Inc.
   Box 11521
   Birmingham, AL 35202

9. Programs for Basic Living Skills
   Interpretive Education
   2306 Winters Dr.
   Kalamazoo, MI 49002

10. Technology Expanding Opportunities for People with Disabilities
    Telesensory Systems, Inc.
    3408 Hillview Avenue
    P.O. Box 10099
    Palo Alto, CA 94304

11. Vocational Kit
    CANHC Literature Center
    645 Odin Dr.
    Pleasant Hill, CA 94523

12. Vocational Program Modules
    Ingham Intermediate School District
    Capital Area Career Center
    611 Hagadorn Road
    Mason, MI 48854

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Appendix G

Minority and Immigrant Youth

Minority and Immigrant Youth*

Language. The provision of fluency in the English language is a major goal of the educational system as it attempts to educate immigrant and minority youth. The difficulty in achieving the goal varies along several dimensions. Influence is exerted by the age and previous linguistic and educational experience of the children, the racial-ethnic mix of each school, and the size of the community.

The provision of extensive bilingual instruction throughout the curriculum (including vocational education classes) combined with cultural maintenance, has been endorsed for immigrant and minority youth. Bilingual instruction in vocational education classes can provide students with the opportunity to learn technical skills in their native language and basic employment vocabulary in English. Bilingual materials for use in training students for new technologies may be lacking, however. The general education of individuals also must be taken into account, along with regional dialects, and the possibilities of offering simultaneous instruction to those students from related language groups should be considered. It is important for instructors to emphasize vocation-specific English in these classes.

Low achievement and alternative learning styles. Achieving fluency in English, as important as it is, does not in and of itself ensure that all immigrant and minority youth will reach the average level of academic performance. Even after allowance is made for differences in composition according to such factors as family income, SES, sex, place of residence, and parental education, some immigrant and minority youth groups show a poorer school performance than the majority group or other immigrant or minority groups.

Adverse effects of low teacher expectations on pupil performance and, conversely, positive advances in performance from raised expectations appear to be fairly well established. In fact, some black American educators have asserted that, given appropriate teacher expectations, neither curriculum nor teaching methods need to be altered for minority youth.

Researchers maintain that an assessment of learning styles reveals distinctive patterns among individuals and among groups. To the extent that individual youth from immigrant or minority groups are identified as having learning styles at variance with the styles demanded by schools, expansion of teaching methods may be desirable. One theory suggests that poor black students are visually and manually (tactile-kinesthetically) rather than verbally inclined.

Recent research on the majority population suggests that a great many children do not learn well in the traditional, verbal style. A new field known as visual literacy has emerged to meet the needs of these youth, many of whom do not come from minority or poor backgrounds. Because as much as one-half of the population may fall into this category, it cannot be designated a minority-group handicap. In a technocratic, verbal civilization, however, it becomes disabling, and it follows that individual learning styles should be considered in devising curriculum and teaching methods for all students, but particularly for immigrant and minority youth. Fortunately, visual and tactile-kinesthetic modes of instruction are well suited to vocational education.

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*This entire appendix is excerpted from a publication of The National Center for Research in Vocational Eduction by Reubens (1983, pp. 13-25). Documentation for the statements made can be found in the Reubens work.

Curriculum. Bicultural or multicultural education programs have been least successful when they involved minority youth only, challenged no majority-group assumptions, or lacked social interaction among culturally diverse youth groups. Where multicultural education has not been implemented, "assimilation" schooling has failed to retain some minority status in the larger society. Vocational education classrooms can provide a setting where group interaction and resolution of the resulting intergroup tensions occur. Training in group problem-solving strategies, such as the quality circles movement offers, is extremely useful for this purpose.

Other curriculum issues in the education of immigrant and minority children, particularly those youth of low SES or from the underclass, concern the pertinence of subject matter to their current circumstances and future prospects, taking into account the socioeconomic structure and the interaction of ethnicity, race, and gender with class. Such an approach may make school more "real" and relevant and decrease truancy and early leaving. In vocational education, a realistic appraisal of present occupational stereotyping and segregation must be balanced by the fostering of self-confidence in immigrant and minority students and the encouragement of attempts to overcome obstacles.

Tests. The use of standardized tests, examinations, and other procedures in the schools has, at times, been seen as misleading or discriminatory with regard to the performance of immigrant and minority youth. The criticism that tests are culture-bound has been partially met by the creation of second-language or "culture-free" versions, or by competency-based and criterion-referenced tests.

Training of teachers and administrators. Teachers and administrators must understand and accept students who are different from the majority culture, the variety of racial and ethnic groups represented, and the resulting special needs of immigrant and minority children. At a minimum, administrators and teachers should have enough awareness of cultural differences to enable them to avoid misdiagnosing immigrant and minority youth as educationally or intellectually deficient or developmentally disabled.

Home, community, and school. Because immigrant and minority parents are sometimes intimidated by schools, they are considerably less likely than the parents of other children to visit schools, to attend scheduled school events, or to participate in parent-teacher associations. It is helpful to take measures to increase immigrant and minority parental participation in school.

Appendix H

Gifted and Talented Youth

Gifted and Talented Youth*

Gifted and talented youth tend to need programming that is individualized and differentiated.

Individualization. Some programs in vocational education have been individualized to meet the needs of high-achieving gifted and talented students. In defining gifted and talented in order to determine eligibility for these programs, the inclusion of additional characteristics in the definition becomes necessary. Concerns for creativity, productivity, and high levels of motor-skill ability should be part of the definition when programs utilizing such traits are available.

One mode of individualization allows gifted and talented students to move in and out of special programs, thereby providing for their individual learning styles and making those programs available to greater numbers of students. Students receive experience-based program assignments for a designated period of time. At the end of that time, other students are assigned to the program. This approach has apparent potential for individualizing programs for gifted and talented students in vocational education.

Another accepted means of providing for the individual learning styles of gifted and talented students has been called relevant enrichment. This method has been used widely and successfully. Gifted and talented students are often enrolled in vocational education programs in addition to academic courses for enrichment.

Acceleration has also long been used to provide for the individual learning styles of gifted and talented students. This approach shortens the number of years gifted and talented students spend in school. The purpose of acceleration is to move them rapidly to the end of their apprenticeship and launch them into careers.

The learning styles of gifted and talented students are elaborated on by Griggs and Price (1979). Gifted and talented students—

- are less teacher-motivated than other students,
- are more persistent than other students,
- are more self-directed and independent than other students,
- like some sound in their learning environment when studying or concentrating, and
- do not like to learn from lectures (e.g., auditorially).

It is apparent from the work of Griggs and Price that gifted and talented students' learning style characteristics are largely related to the emotional element—centering around motivation and persistence.

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*This entire section is excerpted from a publication of The National Center for Research in Vocational Education by Milne (1982, pp. 11-22). Documentation for the statements made can be found in the Milne work.

Differentiation. Just as research into learning styles justifies individualization of instruction, a practice widely used in vocational education, this research provides a rationale for differentiated programming. Pacing to provide for individual differences includes differentiation of programming. Thus, content not found in the regular vocational education curriculum is added to the learning experiences of gifted and talented students to provide for their interests and needs and to enhance their employability.

Three techniques are as follows:

- Exposure—information, materials, and experiences are provided that are new, outside of the usual curriculum, and unusual for the students' grades and ages
- Extension—additional time is provided for investigation of an area of interest, including time for student-initiated activities
- Development—more in-depth investigation of concepts and skills presented in the regular curriculum is encouraged

Programs for gifted and talented students need to provide a balance between independent activities and interaction with resources, both in and out of school. One often overlooked consideration in differentiating learning programs for gifted and talented students is that school may or may not be the best place for them to learn. Community resources may offer richer learning experiences.

Appendix I

Migrant Youth

Migrant Youth*

Recent estimates indicate that there are approximately 900,000 migrant children in the United States; as many as 300,000 of these youth are thought to be working. Approximately 80-90 percent of all migrant youth leave school before graduating with 60 percent leaving before the ninth grade.

Poverty. The extreme poverty faced by migrant families profoundly affects their housing, nutrition, and health care. These life-style factors, in turn, impinge negatively upon the vocational and academic development of migrant youth. Because many migrant youth experience failures in the traditional school setting, they tend to view the classroom as a hostile environment. The absence of immediate rewards in their initial encounters with schools soon results in a lack of interest in academic achievement.

Health problems are important to take into consideration when attempting to understand the limited educational and vocational achievements of migrant youth. In the rural environment of the migrant child, medical facilities and health services are generally inadequate. A migratory life-style further contributes to inadequate health care.

Malnutrition among migrant children is an exceedingly difficult problem; and its correction may be more complicated than a simple diet alteration. General malnourishment and the effects of poor living and work environments may explain, in part, the high rate of mental retardation among migrant youth.

Geographical mobility. Short-term geographical mobility patterns, which characterize the work activities of migrant families, are seen as having disastrous effects on educational achievement among migrant youth. Self-concept, school achievement, and parental involvement in school are all adversely influenced by serial movement from district to district.

Migrant youth are easily identified in harvest communities and schools and are not well accepted. Stigmatized because of their parents' socioeconomic status, they are viewed as a temporary problem that will depart within four to eight weeks. Such prejudicial and discriminatory practices affect the achievement of all migrant youth, Caucasian as well as ethnic and racial minority youth. But when bilingual educational services are not available, the school environment becomes even more hostile to Spanish-speaking youth.

Childhood socialization factors and occupational choices. Social research on the career achievement process has demonstrated the critical role that significant others play in a youth's development—in the forming of educational values and in the making of decisions related to career choice. The range of occupational role models to which these youth are exposed is virtually nonexistent, except for models found in field hand apprenticeship activities. Career exploration for migrant youth is limited to agriculture-related labor activities. It is apparent that self-concept formation in migrant youth is predicated primarily on negative and inadequate socialization.

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*This entire section is excerpted from a publication of The National Center for Research in Vocational Education by Picou (1982, pp. 11-23). Documentation for the statements made can be found in the Picou work.

Types of programs needed. It is often exceedingly difficult to gain the trust and cooperation of migrant children; therefore, educators must attempt to develop communication strategies to effectively transmit information to them. To achieve this goal, teachers must have knowledge of the unique communication problems that exist among migrant youth.

> The [migrant] child has restricted experiences and often limited conversational opportunities for language development. He may not comprehend what he sees or hears. Models of good sentence structure and vocabulary are not readily available to him. He speaks and listens in his dialect or own language, not understanding what is going on in class. For example, in arithmetic, "to carry" has no meaning to him, but "to tote" does. Thus many times he is overpowered by middle class vocabulary. (New York State Bureau of Elementary Curriculum Development 1968, p. 13)

The two- to three-year lag of migrant youth behind comparable middle-class youth in academic achievement is a critical factor in explaining their high dropout rate. Although vocational education has traditionally focused on teaching job skills, it is apparent that basic skills should be included in vocational education programs designed for migrant youth. The development of reading, writing, and mathematics skills would enhance vocational training and would provide a basis for more specialized training in technical occupations.

Improvements in academic achievement and communication skills can contribute to helping migrant youth overcome negative self-concepts. For instance, improved communication skills are tools that can help migrant youth better cope with their personal problems through the expression of personal attitudes and values. In the case of the vast majority of migrant youth, developing improved communication skills also means increasing the level of bilingual education offered.

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